

COST Action Final Assessment Review (01/10/2018 to 30/09/2022)

CA17118: Identifying Biomarkers Through Translational Research for Prevention and Stratification of Colorectal Cancer

This report is submitted by the Action Rapporteur in fulfilment of the requirements of the rules for COST Action Management, Monitoring and Final Assessment and is confidential to the COST Association and the Management Committee of the Action.

Summaries

Main aim/ objective

use innovative translational research to identify colorectal cancer biomarkers for personalized medicine that will improve screening, early detection and disease follow-up, and attain better tumor profiling, state-of-the-art functional characterization of genetic variants and new therapy approaches

The Action addressed this as described below

TRANSCOLOCAN ran successfully with no major concerns during its four years. The only major limitation was the pandemic period in 2020-2021, which precluded the normal progress of most planned activities in that time. The number of participants and countries involved increased during its development. In the end, there were 495 participants from 37 countries, including 31 COST countries, 3 NCC (Tunisia, Armenia and Azerbaijan) and 3 international partner countries (USA, Argentina, Australia). Regarding Working Groups (WGs) participation, the participants distributed in the following manner: WG1 (disease risk profiling) included 198 participants, WG2 (liquid biopsies) had 271 participants, WG3 (tumor profiling) comprised by 293 participants, and WG4 (functional studies and new therapies) was constituted by 194 participants. Participation, as shown, was ample in all 4 WGs, being WG2 and WG3 the most populated. Most participants had interest in two or more WGs. This COST Action also involved industry including 16 SMEs from 12 countries, and patients' associations. They were invited to meetings and other activities and there was a SME committee to help integrate them within this Action and promote interactions with academic participants.

Accomplishment of MoU objectives and deliverables has been achieved for most of them. Accordingly, there are over 100 publications acknowledging this COST Action CA17118 and several projects or proposals have started within the network in the field of colorectal cancer (CRC). More details are available in the different sections of this report and in our dedicated website at <https://www.transcoloncan.eu/>.

TRANSCOLONCAN was fully aware of the nature of the COST funding and its objective to promote education of young researchers and ITC investigators in our field of research. With this in mind, we organized (or collaborated to organize) four successful training schools (TS), in the topics of risk modeling in CRC, liquid biopsies, the chorioallantoic membrane model, and stem cells/organoids.

It has been very rewarding to witness the progress in the field of study of some researchers from ITC countries. It should be highlighted that ITC participants from Czech Republic, Estonia, Malta, North Macedonia, Poland, Portugal, Romania, Serbia and Turkey were among the more interested and active. With two specific examples, it is proof of their positive progress in the last four years by achieving important research results (<https://www.nature.com/articles/s41598-021-99046-w>, Estonia) or obtaining relevant EU funding (Twinning STEPUIORS in Serbia).

Gender balance, it was widely promoted during the lifetime of TRANSCOLONCAN. There were 295 women participants at the end of the network, corresponding to 59.6 % (295/495). Gender balance was also endorsed in management roles, and it was observed when accepting participants in activities and meetings. Indeed, it should be highlighted that women were very active in our consortium and they are major contributors to its success. One the major highlights of this Action is the success of the MSCA Doctoral Network ColoMARK on liquid biopsies led by a young female researcher with the collaboration of other participants of this network (<https://www.transcoloncan.eu/news/24/colomark-new-msca-network>).

The Rapporteur summarised the Action's major outcomes, impacts and successes as follows

The present consortium has addressed the public common problems of colorectal cancer at 360°. The consortium has very well integrated basic and clinical expertises. As strengthened by top level publications as well as patents developed within the action and as corroborated by the development of novel collaborative projects started by members of the present consortium the TRANSCOLOCAN consortium has reached very important goals which might impact health and society in the future. The consortium has identified novel biomarkers which are important for diagnosis prognosis as well as treatment response in CRC. The impact could be immense: It is expected to get in the very near future guidelines for treatment and new

patients management as well as new kits identifying risk and strategies. Last but not least, gender balance and young researchers from ITC have made of this action a success example.

Achievement of MoU objectives, deliverables and additional outputs/ achievements

MoU objectives

The Action reported the achievement of the following objectives and their dependence on the Action networking.

MoU objective	Level of achievement reported by Action	Dependence reported by Action	Dependence assessed by Rapporteur
To reduce the fragmented research and lack of communication between researchers working on CRC. Nowadays, CRC research needs to come together. This Action would allow the European scientists to embark in a thorough discussion of timely questions and methodological challenges, enable interdisciplinary networking and foster new collaborations.	76 - 100%	High	High
To permit the interconnection and interdisciplinary networking of researchers working in different CRC fields. By doing so, it will strengthen existing alliances and facilitate new collaborations. Most members will be active in more than one WG, thus allowing substantial crosstalk between groups and interactions between different disciplines.	76 - 100%	High	High
To optimize the technical and medical processes involved in the prevention, screening and CRC management by using new approaches such as the emerging fields of microbiome characterization, metabolomics profiling, circulating tumor cells/nucleic acids, tumor mutational profiling, single-cell genomics, gene editing and immunotherapy. An important socio-economic impact is expected.	76 - 100%	High	High
To jointly develop scientific guidelines/recommendations for the different methodologies used in each WG through coordination among the involved participants. These documents will be later publicly available and back into the community, including patients, stakeholders and the general population.	76 - 100%	High	High
To aim towards FAIR data stewardship, i.e. making data Findable, Accessible, Interoperable and Reusable. Therefore, all data acquired within TRANSCOLONCAN will be uploaded in available research IT tools such as OpenClinica, TranSMART and cBioPortal, currently facilitated by Health-RI translational office suite (https://health-ri.org/).	76 - 100%	High	High
To use results derived from this Action as input for future market applications which could foster cooperation with private enterprises, being CRC screening devices a clear example. This Action is focused on timely and realistic research questions in the CRC field so intellectual property (IP) matters are expected.	51 - 75%	Medium	Medium
To foster knowledge, know-how, exchange and creation of synergies in a highly relevant topic in the scientific and socio-economic point of views to develop a joint research agenda.	76 - 100%	High	High
To bring into an interdisciplinary network separate scientific disciplines such as clinical CRC practice, germline and somatic genetics, epigenetics, bioinformatics, cell and	76 - 100%	High	High

molecular biology, microbiology, immunology, biostatistics, epidemiology and health economy and the industrial sector.			
To remain open for new interested groups and SMEs working on this field and facilitate their incorporation in a single effective and interactive European research network. This policy will include especially those from Inclusiveness Target Countries (ITC) or with less capacity in the field.	76 - 100%	High	High
To highlight the importance of training about the research topics developed, particularly for early career investigators (ECI) and ITC researchers. Training will take place during meetings, specialized workshops and conferences, STSM and training schools.	76 - 100%	High	High
To take into account constantly in the planned activities ECI and comply with the gender balance and ITC policies.	76 - 100%	High	High
To assure a future growth of scientific strength of the network, guaranteed by the educative and promoting role of the Action.	76 - 100%	High	High
To ensure the correct integration, dissemination and exploitation of all knowledge and data from TRANSCOLONCAN amongst the research groups of interest, industry sectors and users.	76 - 100%	High	High

Dependence = dependence of the achievement (of each MoU objective) on the Action networking.

Rapporteur assessment of the achievement of MoU objectives that the Action reported as achieved (76-100%)

The Action did achieve all the above objectives that it reported were more than 75% achieved.

Action explanation regarding MoU objectives reported as not fully achieved (less than 76%)

The table below shows the Action's explanation and the Rapporteur's analysis thereof for any MoU objectives that the Action reported as not fully achieved.

MoU Objective that was reported as not fully achieved	Action's explanation	Rapporteur's analysis
To use results derived from this Action as input for future market applications which could foster cooperation with private enterprises, being CRC screening devices a clear example. This Action is focused on timely and realistic research questions in the CRC field so intellectual property (IP) matters are expected.	There is still space for further collaborations between participants and SMEs to result in a more productive translations to market applications.	The explanation given is understandable. The consortium has been more focusing on science development and slightly lost focus on 'product production'. This is understandable since science has a priority in respect to products (so products might follow). It is also understandable that if the companies involved might be more on focus the connection could have been easier and also their own interest more stimulated. This might be still possible to achieve even after the consortium validity for example by exploiting the IP developed by the consortium.

General Assessment of MoU objectives

The level of ambition of the MoU objectives was **High**
Overall, **the Action achieved all MoU Objectives.**

Deliverables

Delivery and level of dependence of deliverables reported by Action

Deliverable	Timing deliverable	Dependence reported by Action*
Working Group 1. Disease risk profiling - Research publications regarding microbiome, metabolomics profiling and CRC risk modeling.	Delivered	High
Working Group 1. Disease risk profiling - Software and protocols for CRC risk modeling.	Delivered	Medium
Working Group 1. Disease risk profiling - Guidelines for CRC screening in the general population.	Not delivered, but foreseen within 2 years	Medium
Working Group 2. Non-invasive biomarkers - Research publications regarding detection and characterization of CRC and adenomas CTCs, ctDNA, exosomes and TEP.	Delivered	High
Working Group 2. Non-invasive biomarkers - SOPs for the detection of CRC and adenomas CTCs, ctDNA, exosomes and TEP.	Not delivered, but foreseen within 2 years	Medium
Working Group 2. Non-invasive biomarkers - Guidelines for the inclusion of liquid biopsy for the diagnostic and follow-up of CRC.	Not delivered, but foreseen within 2 years	Medium
Working Group 3. Tumor profiling - Publication of the adenoma and carcinoma genomic profiles and their associated transcriptomic signatures in high profile journals.	Delivered	High
Working Group 3. Tumor profiling - Tools to delineate and characterize tumor evolution.	Delivered	High
Working Group 3. Tumor profiling - Therapeutic impact of intratumor heterogeneity (ITH) in disease management.	Not delivered, but foreseen within 2 years	High
Working Group 3. Tumor profiling - Bench-to-bed transferability of biomarkers for prognosis and treatment response prediction.	Not delivered, but foreseen within 2 years	High
Working Group 4. Functional genomics and therapy - Research publications about new pathogenicity links for genetic variants and their involvement in germline or somatic CRC predisposition, and about novel CRC immunotherapies.	Delivered	High
Working Group 4. Functional genomics and therapy - Protocols for CRISPR-Cas9 gene editing.	Not foreseen	Low
Working Group 4. Functional genomics and therapy - Guidelines for functional evaluation of candidate gene variants by gene editing.	Delivered	High
Working Group 4. Functional genomics and therapy - Optimized pipeline for neo-antigen screening in CRC patients.	Delivered	Medium
Working Group 4. Functional genomics and therapy - Clinical protocols for the introduction of immunotherapy in (neo-)adjuvant treatment setting.	Not delivered, but foreseen within 2 years	Medium

* Dependence reported by Action = the extent to which the delivery of the deliverable was dependent on the Action networking

Rapporteur analysis of level of delivery of deliverables

The level of delivery of the deliverables reported above is assessed as follows.

The majority of the deliverables have been delivered. Only some have not been but it is credible that they will be in the near future.

- **Analysis of deliverables reported by the Action as delivered**

The deliverables that the Action reported as delivered are confirmed.

- **Analysis of deliverables reported by the Action as not delivered but delivery foreseen within 2 years**

Deliverable	Plans to ensure delivery within two years
Working Group 1. Disease risk profiling - Guidelines for CRC screening in the general population.	Guidelines for CRC screening have not been developed during the life of this Action. Most countries participating in it have their own national guidelines. On the other hand, some countries do not have yet CRC population screening implemented. Hopefully, they will establish cost-effective strategies soon. Regarding this matter, one of the spin-off ideas for a new COST Action proposal is indeed one focused specifically in CRC screening led by Dr. Carlo Senore (Italy). Also, the following reviews related to WG1 were produced: https://www.sciencedirect.com/science/article/abs/pii/S0098299719300330?via%3Dihub https://www.sciencedirect.com/science/article/pii/S0098299719300329?via%3Dihub https://www.frontiersin.org/articles/10.3389/fonc.2021.626349/full https://www.mdpi.com/2072-6694/13/11/2534 There was also a training school devoted to risk profiling in CRC: https://www.transcoloncan.eu/events/2/training-school-risk-modeling-in-colorectal-cancer
Deliverable	Plans to ensure delivery within two years
Working Group 2. Non-invasive biomarkers - SOPs for the detection of CRC and adenomas CTCs, ctDNA, exosomes and TEP.	SOPs for the detection of CRC and adenomas CTCs, ctDNA, exosomes and TEP have not been developed during the life of this Action. However, the following reviews and one white paper related to WG2 were produced: https://www.sciencedirect.com/science/article/abs/pii/S1383574219300080?via%3Dihub https://academic.oup.com/mutage/article/35/3/243/5648190 https://www.sciencedirect.com/science/article/pii/S0098299719300093 https://www.mdpi.com/2072-6694/11/8/1170 https://www.sciencedirect.com/science/article/abs/pii/S1040842820302481?via%3Dihub There was also a training school devoted to circulating tumor DNA (ctDNA) and circulating tumor cells (CTC) in CRC: https://www.transcoloncan.eu/events/23/training-school-in-aarhus Presentations during this training school are available at: https://ctdna.dk/component/content/article/12-news/39-training-school-for-detection-and-analysis-of-circulating-tumor-dna-ctdna-and-circulating-tumor-cells-ctc?Itemid=101
Deliverable	Plans to ensure delivery within two years
Working Group 2. Non-invasive biomarkers - Guidelines for the inclusion of liquid biopsy for the diagnostic and follow-up of CRC.	Specific guidelines to include liquid biopsy in the diagnosis and follow-up of CRC have not been produced during this Action. However, the interest of

	<p>this WG has raised over time. This relevance is reflected in the establishment of 2 new international scientific societies in the topic of this WG, including the International Society of Liquid Biopsy (ISLB, https://islb.info/) and the European Liquid Biopsy Society (ELBS, https://www.uke.de/english/departments-institutes/institutes/tumor-biology/european-liquid-biopsy-society-elbs/index.html), both started by members of this Action (ISLB-María José Serrano; ELBS- Nikolas Stoecklein). It is also worth mentioning that a new COST Action proposal is intended about liquid biopsies led by Nikolas Stoecklein.</p>
Deliverable	Plans to ensure delivery within two years
Working Group 3. Tumor profiling - Therapeutic impact of intratumor heterogeneity (ITH) in disease management.	A collaborative research study conducted at IDIBAPS (Spain), IDIBELL (Spain) and NKI (The Netherlands) aims at collecting early-stage colorectal cancer samples to infer the role of (i) chromosome instability by quantifying DNA double-strand breaks (Dr. Fijneman and Dr. Carvalho, NKI) and (ii) the subclonal distribution of copy-number alterations and aneuploidy burden (Dr. Camps and Dr. Moreno, IDIBAPS and IDIBELL, respectively) to predict the risk of disease recurrence. In addition, we have started a collaboration with Dr. Graham from ICR (UK) to detect copy-number heterogeneity in circulating tumor DNA. Both initiatives will result in highly relevant publications.
Deliverable	Plans to ensure delivery within two years
Working Group 3. Tumor profiling - Bench-to-bed transferability of biomarkers for prognosis and treatment response prediction.	Transferring novel tumor biomarkers to the daily-bases clinical practice is the ultimate goal of WG3. In this regard, several undergoing collaborative studies are using genomic tools to assess how circulating tumor cells reproduce the genetic content present in the matched primary tumor (IDIBAPS and Heinrich-Heine-Universität Düsseldorf), how copy-number alterations are responsible of the adenoma progression (NKI, Charles University of Prague and IDIBAPS). Grant applications are currently being under preparation (e.g., HORIZON-MISS-2021-CANCER-02-03 call: Proposal number 101096714, Acronym MOMO) and scientific articles will be submitted for publication.
Deliverable	Plans to ensure delivery within two years
Working Group 4. Functional genomics and therapy - Clinical protocols for the introduction of immunotherapy in (neo-)adjuvant treatment setting.	Introducing immunotherapy as a new (neo-)adjuvant treatment option in the clinical practice is one the ultimate goals of WG4. In this regard, several undergoing collaborative studies are trying to understand what determines responses to cancer immunotherapy (in the neoadjuvant setting) so that: 1) appropriate patient selection can be implemented and 2) additional patients may be sensitized to immune checkpoint blockade.

The plans described by the Action to ensure the delivery within two years are credible.

- **Analysis of deliverables reported by Action as not delivered and delivery not foreseen**

Deliverable	Explanation
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Working Group 4. Functional genomics and therapy -
Protocols for CRISPR-Cas9 gene editing.

Since the proposal stage of this network until now, the CRISPR-Cas9 gene editing field has evolved tremendously, with constant improvement in the efficiency of this technique and facility to achieve the final target. Several groups in this network have used it in their experiments with optimal results (<https://pubmed.ncbi.nlm.nih.gov/35838828/>; <https://pubmed.ncbi.nlm.nih.gov/32179092/>). Therefore, its generalization as a molecular tool in biomedical research precluded from producing protocols for it since it was considered not necessary.

The Action's explanation is analysed as follows Working Group 1. Disease risk profiling - Guidelines for CRC screening in the general population. Since this D will provide guidelines of action is credible that it will be delivered within 2 years. Working Group 2. Non-invasive biomarkers - Guidelines for the inclusion of liquid biopsy for the diagnostic and follow-up of CRC. Since this D will provide guidelines of action is credible that it will be delivered within 2 years. Working Group 3. Tumor profiling - Bench-to-bed transferability of biomarkers for prognosis and treatment response prediction. Since this D will provide potential transferability of action is credible that it will be delivered within 2 years. Working Group 4. Functional genomics and therapy - Protocols for CRISPR-Cas9 gene editing. It is understandable that this was not foreseen due to the fact that the technology is currently used with many working protocols. Working Group 4. Functional genomics and therapy - Clinical protocols for the introduction of immunotherapy in (neo-)adjuvant treatment setting. Idem as previously mentioned. The protocols need more time to be integrated, proposed and started.

- **Analysis of the level of dependence on the Action networking of the achievement of the deliverables**

The dependence on the Action networking of the achievement of the deliverables reported by the Action is confirmed

General Assessment of deliverables

The level of ambition of the deliverables was **high**
Overall, **the Action achieved all deliverables**

Additional outputs / achievements

Co-authored Action publications

The Action reported 100 publications on the topic of the Action, co-authored by at least two Action participants from two countries participating in the Action, and for which the Action networking was necessary. The full list of publications appears in Annex I.

Action networking was necessary for ALL of the listed publications

The:

- **Quality** of the Action's co-authored publications is **excellent**.
Among the achieved publications there are some studies in top journals which suggest that the creation and collaborations within the consortium were very useful.
- **Significance** of the Action's co-authored publications is **excellent**.
The publications underline very important results and studies on CRC.
- **Relevance** to the Action of the Action's co-authored publications is **excellent**.
These publications are very relevant in the basic and clinical cancer research field.
- **Quantity** of the Action's co-authored publications is **very good**.
The number of achieved publications met the expectation and is even higher. It needs also to be considered that quality is certainly more important than quantity.

Projects and proposals resulting from Action activities

The Action reported the following projects resulting from Action activities involving at least one Action participant, and for which the Action networking was necessary.

Title	Main proposer name	Funder
Exploring the role of microbiota and metabolic interactions in the development of gastrointestinal cancers	David Hughes	National
Exploring the role of genetically determined BMI in infancy, childhood and early adulthood on cancer development in later life	David Hughes	National
Organ-VIP: Genetically modified organoids for genetic variant interpretation in colorectal cancer	Noemi Gonzalez-Abuin	H2020 - Horizon Europe
Establishment of compatible institutional registers and network of counseling centers for hereditary gastrointestinal tumors	Zoran Krivokapic	Trans-national - Scientific and technological cooperation between Republic of Serbia and Republic of Croatia
A mechanistic study of the role of the aldo keto reductase AKR1B10 in dysregulated metabolic networks in hepatocellular carcinoma	Sreeparna Banerjee	National
Tracking systemic therapy resistance of lung and colorectal cancer through targeted NGS analysis of genetic and epigenetic variants in liquid biopsies	Miljana Tanic	National

(TRACEPIGEN)		
Molecular basis of response to chemioradiotherapy in rectal cancer	Zoran Krivokapic	National
SENSOGENE - Cancer biosensors based on gene regulatory elements	Aleksandra Nikolic	National
Identification of pharmacogenomic biomarkers using whole exome sequencing in patients with colorectal cancer (LTC19015)	Pavel Souček	National
RAtional design of canceR ImmunoTherapY: one size does not fit all (RARITY)	Noel de Miranda	H2020 - Horizon Europe
Repair of DNA lesions induced by platinum drugs	Jana Slyskova	H2020 - Horizon Europe
Role of novel suspect molecules associated with resistance of cancer cells to taxanes	Jan Kovář	National
Feasibility study of next generation sequencing for individualized therapy of patients with solid tumors	Pavel Souček	National
Liquid biopsies	Mev Dominguez-Valentin	Trans-national - Private funding from Peru to develop work in Norway
Liquid biopsies	Mev Dominguez-Valentin	Trans-national - Private funding from Peru to develop work in Norway
EUCANCan: a federated network of aligned and interoperable infrastructures for the homogeneous analysis, management and sharing of genomic oncology data for Personalized Medicine	David Torrents	H2020 - Horizon Europe
Gut MICROBiome-based approach for incorporating new biomarkers into COLOrectal cancer screening (MICROCOLO)	Andrea Gsur	National
Molecular adenoma features to predict colorectal cancer risk (IntEnd study)	Beatriz Carvalho	National
New genetic variants causing increased cancer risk with impact in diagnosis and treatment (Programme 2), Colorectal Cancer subdivision	Cristina Albuquerque	National
Integrated approach to target early onset colorectal cancer: from familial risk evaluation to precision therapy	Cristina Albuquerque	National
Targeting metastases in colorectal cancer: identification of early biomarkers and development of novel drug delivery therapies	Cristina Albuquerque	National
MICAfrica-Towards a North-African Consortium of the Human Microbiome (NACHM) through strengthening the Capacities in Microbiome Analysis for Human	Leila Ammar	H2020 - Horizon Europe

Diseases at University of Sfax		
ONCOBIOME-Gut OncoMicrobiome Signatures (GOMS) associated with cancer incidence, prognosis and prediction of treatment response	Laurence Zitvogel	H2020 - Horizon Europe
SINO-GERMAN MOBILITY PROGRAMME: Clinical implications of familial colorectal cancer	Asta Försti	Trans-national - SINO-GERMAN MOBILITY PROGRAMME
Colorectal cancer research	Seçil Demirkol Canlı	National
Identification and development of novel colorectal cancer biomarkers via state-of-the-art liquid biopsy approaches (ColoMARK)	Ceres Fernandez-Rozadilla	H2020 - Horizon Europe
Twinning for a European Consortium of Rectal Cancer Research Institutions through Stepping Up Scientific, Technological and Innovation Excellence of IORS (STEPUPIORS)	Milena Cavic	H2020 - Horizon Europe
Photoswitchable and chimeric molecules for spatially restricted and endoplasmic reticulum-specific blockade of PD-L1 protein	Lukasz Skalniak	National
Voomics - Omics approaches to investigate the anticancer properties of colonic metabolites derived from Virgin Olive Oil	Teresa Serra	National
New genetic variants causing increased cancer risk with impact in diagnosis and treatment	Cristina Albuquerque	National
Molecular adenoma features to predict colorectal cancer risk	Beatriz Carvalho	National

In addition the Action reported 19 proposals resulting from Action activities involving at least one Action participant, and for which the Action networking was necessary.

Relevance of the Action's proposals and/ or projects is **excellent**

Quantity of the Action's proposals and/ or projects is **very good**

Action networking was necessary for ALL of the listed proposals / projects

Other Outputs / Achievements

The table below shows the other outputs / achievements and level of dependence on the Action networking reported by the Action and the Rapporteur's assessment thereof.

Other Output / Achievement reported by Action	Dependence reported by Action	Dependence assessed by Rapporteur
It should be mentioned that, produced by participants in TRANSCOLONCAN, the special issue – "New insights on the	High	High

molecular aspects of colorectal cancer” of 10 review research articles in the Molecular Aspects of Medicine journal surely serves as a interesting, up-to-date series of recommendations covering the different disciplines and WGs developed in this Action

(
<https://www.sciencedirect.com/journal/molecular-aspects-of-medicine/vol/69>):

- The landscape of genomic copy number alterations in colorectal cancer and their consequences on gene expression levels and disease outcome. Ried et. Mol Aspects Med. 2019 Oct;69:48-61. doi: 10.1016/j.mam.2019.07.007
- Lifestyle and dietary environmental factors in colorectal cancer susceptibility. Murphy et al. Mol Aspects Med. 2019 Oct;69:2-9. doi: 10.1016/j.mam.2019.06.005.
- Circulating biomarkers for early detection and clinical management of colorectal cancer. Marcuello et al. Mol Aspects Med. 2019 Oct;69:107-122. doi: 10.1016/j.mam.2019.06.002.
- Colorectal cancer: A paradigmatic model for cancer immunology and immunotherapy. IJsselsteijn et al. Mol Aspects Med. 2019 Oct;69:123-129. doi: 10.1016/j.mam.2019.05.003.
- Somatic mutational signatures in polyposis and colorectal cancer. Grolleman et al. Mol Aspects Med. 2019 Oct;69:62-72. doi: 10.1016/j.mam.2019.05.002.

<ul style="list-style-type: none"> • Microbiome and colorectal cancer: Roles in carcinogenesis and clinical potential. Saus et al. Mol Aspects Med. 2019 Oct;69:93-106. doi: 10.1016/j.mam.2019.05.001. • DNA methylation and chromatin modifiers in colorectal cancer. Vymetalkova et al. Mol Aspects Med. 2019 Oct;69:73-92. doi: 10.1016/j.mam.2019.04.002. • Approaches to functionally validate candidate genetic variants involved in colorectal cancer predisposition. Bonjoch et al. Mol Aspects Med. 2019 Oct;69:27-40. doi: 10.1016/j.mam.2019.03.004. • Update on genetic predisposition to colorectal cancer and polyposis. Valle et al. Mol Aspects Med. 2019 Oct;69:10-26. doi: 10.1016/j.mam.2019.03.001. • Mendelian randomisation: A powerful and inexpensive method for identifying and excluding non-genetic risk factors for colorectal cancer. Cornish et al. Mol Aspects Med. 2019 Oct;69:41-47. doi: 10.1016/j.mam.2019.01.002. 		
<p>SOPs for the detection of CRC and adenomas CTCs, ctDNA, exosomes and TEP have not been developed during the life of this Action. However, the following reviews (including those in the special issue – “New insights on the molecular aspects of colorectal cancer” of 10 review research articles in the Molecular Aspects of Medicine journal surely serves as a interesting, up-to-date series of recommendations covering the different disciplines and WGs developed in this Action (https://www.</p>	<p>High</p>	<p>High</p>

sciencedirect.com/journal/molecular-aspects-of-medicine/vol/69) and one white paper related to WG2 were produced:

Murphy N, et al. Lifestyle and dietary environmental factors in colorectal cancer susceptibility. *Mol Aspects Med* 2019;69:2-9. <https://doi.org/10.1016/j.mam.2019.06.005>.

Valle L, et al. Update on genetic predisposition to colorectal cancer and polyposis. *Mol Aspects Med* 2019;69:10-26. <https://doi.org/10.1016/j.mam.2019.03.001>.

Bonjoch L, et al. Approaches to functionally validate candidate genetic variants involved in colorectal cancer predisposition. *Mol Aspects Med* 2019;69:27-40. <https://doi.org/10.1016/j.mam.2019.03.004>.

Cornish AJ, et al. Mendelian randomisation: A powerful and inexpensive method for identifying and excluding non-genetic risk factors for colorectal cancer. *Mol Aspects Med* 2019;69:41-47. <https://doi.org/10.1016/j.mam.2019.01.002>.

Ried T, et al. The landscape of genomic copy number alterations in colorectal cancer and their consequences on gene expression levels and disease outcome. *Mol Aspects Med* 2019;69:48-61. <https://doi.org/10.1016/j.mam.2019.07.007>.

Grolleman JE, et al. Somatic mutational signatures in polyposis and colorectal cancer. *Mol Aspects Med* 2019;69:62-72. <https://doi.org/10.1016/j.mam.2019.05.002>.

Vymetalkova V, et al. DNA methylation and chromatin modifiers in colorectal cancer. *Mol Aspects Med* 2019;69:73-92. <https://doi.org/10.1016/j.mam.2019.04.002>.

Saus E, et al. Microbiome and colorectal cancer: Roles in carcinogenesis and clinical potential. *Mol Aspects Med* 2019;69:93-106. <https://doi.org/10.1016/j.mam.2019.05.001>.

Marcuello M, et al. Circulating biomarkers for early detection and clinical management of colorectal cancer. *Mol Aspects Med* 2019;69:107-122. <https://doi.org/10.1016/j.mam.2019.05.001>.

016/j.mam.2019.06.002.

IJsselsteijn ME, et al. Colorectal cancer: A paradigmatic model for cancer immunology and immunotherapy. *Mol Aspects Med* 2019;69:123-129. <https://doi.org/10.1016/j.mam.2019.05.003>.

Cervena K, et al. Diagnostic and prognostic impact of cell-free DNA in human cancers: Systematic review. *Mutat Res Rev Mutat Res* 2019;781:100-129. <https://doi.org/10.1016/j.mrrev.2019.05.002>.

Francavilla A, et al. Exosomal microRNAs and other non-coding RNAs as colorectal cancer biomarkers: a review. *Mutagenesis* 2020;35(3):243-260. <https://doi.org/10.1093/mutage/gez038>.

Schubert SA, et al. The missing heritability of familial colorectal cancer. *Mutagenesis* 2020;35(3):221-231. <https://doi.org/10.1093/mutage/gez027>.

Genua F, et al. The Role of Gut Barrier Dysfunction and Microbiome Dysbiosis in Colorectal Cancer Development. *Front Oncol* 2021;11:626349. <https://doi.org/10.3389/fonc.2021.626349>.

Daca Alvarez M, et al. The Inherited and Familial Component of Early-Onset Colorectal Cancer. *Cells* 2021;10(3):710. <https://doi.org/10.3390/cells10030710>.

Mallafré-Muro C, et al. Comprehensive Volatilome and Metabolome Signatures of Colorectal Cancer in Urine: A Systematic Review and Meta-Analysis. *Cancers* 2021;13(11):2534. <https://doi.org/10.3390/cancers13112534>.

Haimov D, et al. Nonmalignant Features Associated with Inherited Colorectal Cancer Syndromes-Clues for Diagnosis. *Cancers* 2022;14(3):628. <https://doi.org/10.3390/cancers14030628>

Connors D, et al. International liquid biopsy standardization alliance white paper. *Crit Rev Oncol Hematol* 2020;156:103112. <https://doi.org/10.1016/j.critrevonc.2020.103112>. (WG2 white paper)

<p>An educational video about metabolics was disseminated (Science in 1 minute: what is metabolimcs; https://www.transcoloncancer.eu/news/2/science-in-1-minute-what-is-metabolomics). This topic is underrepresented within WG1 and hopefully participants with this expertise will increase in the near future.</p>	Medium	Medium
<p>Godfrey Grech, associate professor of Pathology at the University of Malta and TRANSCOLONCAN member, has established an educational YouTube channel on gut health (https://www.youtube.com/channel/UCZjdjRj6zlyGmgYAwwbARBQ). The featured video series provides knowledge that can be acted upon to reduce the risk of cancer and to support screening programs and other early detection strategies.</p>	Medium	Medium
<p>On the other hand, being this Action focused on timely and realistic research questions in the CRC field, intellectual property (IP) matters were expected. The following intellectual property items were reported by participants:</p> <p>Inventors: Toni Gabaldón, Olfat Khannous, Ester Saus, Sergi Castellvi-Bel</p> <p>Patent: Method for screening for colorectal cancer using fecal microbiome profiling</p> <p>EP22179747</p> <p>Inventors: Beatriz Carvalho</p> <p>Patent: Protein biomarkers for detection of colorectal cancer (CRC)</p> <p>2008707;EP13720130.7;14/396,522, NL 2010276;PCT/NL13/50316;15/444,679;EP19201973.5</p> <p>Inventors: Beatriz Carvalho</p> <p>Patent: Protein biomarkers (II) for detection of colorectal cancer in stoolINL</p> <p>17172531.0;2017-009-02;2017-009-03;2017-009-04;2017-009-05;2017-009-06</p>	Medium	Medium

Inventors: Beatriz Carvalho Patent: Progression markers for colorectal cancer EP19187894.1;PCT/NL2020/050482		
An educational video about genetic predisposition was disseminated (Science in 1 minute: what is genetic predisposition; https://www.transcoloncancer.eu/news/18/science-in-1-minute-what-is-genetic-predisposition).	High	High
A dissemination video on cancer risk prediction (https://videos.iarc.fr/videos/?video=MEDIA210115103248594) was also produced.	Medium	Medium
The dissemination video "What does it mean to have a genetic predisposition to cancer?" (https://www.youtube.com/watch?v=OQ6ViflKd4Q) was produced for Researchers' Night 2020.	High	High
The dissemination video about her work on microbiome and colorectal cancer was produced by Flavia Genua for Researchers' Night 2020 (https://www.youtube.com/watch?v=8TwNECG7eUY).	High	High
The dissemination video "What is cancer?" was produced by Noel de Miranda (https://www.youtube.com/watch?v=12vzu9cJIXQ).	Medium	Medium
A final dissemination video was produced as a summary of the achievements of the Action. It was shot at the final conference in June 2022 . Both short (intended for social networks; https://twitter.com/transcoloncancer) and long versions are available (https://www.youtube.com/watch?v=qQ7MsA5HVBk).	High	High

The quality, quantity and dependence (on the Action networking) of the other outputs/ achievements was assessed as follows.

As a general assessment of the other outputs of the present action the main achievements have had an high dependency on the action creation and networking suggesting a success story for the present consortium which likely will continue with collaborative efforts and common projects as started already.

Assessment of additional outputs and achievements (including co-authored publications and proposals/ projects)

The level of ambition of additional outputs and achievements was **high**.
Overall, **the Action achieved > 4 valid Additional Outputs / Achievements**.

General Assessment

The Action's outputs and achievements are **excellent**.

Impacts

The Action reported the following impacts (the short- to long-term scientific, technological, and / or socioeconomic changes produced by a COST Action, directly or indirectly, intended or unintended) that have resulted, or might result, from the Action.

Description of the impact	Type of impact	Timing of impact
<p>Novel methods have been developed by WG4 participants for correct pathogenicity assessment of genetic variants, including the use of CRISPR-Cas and organoid modeling. New genes for hereditary CRC have been identified by participants. Examples correspond to NTHL1, MBD4, FAF1, MCM9 or MCM8. Benefits are scientific, economic (screening is directed to carriers) and societal (patients are benefited with a more targeted care). Additional impacts are foreseen in the near future with the identification of additional new germline genes for hereditary CRC.</p> <p>Relevant publications are the following:</p> <p>WG4. Grolleman JE, et al. Mutational Signature Analysis Reveals NTHL1 Deficiency to Cause a Multi-tumor Phenotype. <i>Cancer Cell</i> 2019 Feb 11;35(2):256-266.e5. https://doi.org/10.1016/j.ccell.2018.12.011.</p> <p>WG4. Mur P, et al. Role of POLE and POLD1 in familial cancer. <i>Genet Med</i> 2020;22(12):2089-2100. https://doi.org/10.1038/s41436-020-0922-2.</p> <p>WG4. Bonjoch et al. Germline mutations in FAF1 are associated with hereditary colorectal cancer. <i>Gastroenterology</i> 2020;159:227–240; https://doi.org/10.1053/j.gastro.2020.03.015.</p> <p>WG4. Palles C, et al. Germline MBD4 deficiency causes a multi-tumor predisposition syndrome. <i>Am J Hum Genet.</i> 2022 May 5;109(5):953-960. https://doi.org/10.1016/j.ajhg.2022.03.018.</p> <p>WG4. Huebner K, et al. ATF2 loss promotes tumor invasion in colorectal cancer cells via upregulation of cancer driver TROP2. <i>Cell Mol Life Sci</i> 2022;79(8):423. https://doi.org/10.1007/s00018-022-04445-5.</p>	<ul style="list-style-type: none"> • Scientific / Technological • Economic • Societal 	<p>Achieved</p>
<p>Validity, relevance and significance (in particular importance and timeliness) of the impact reported by the Action: Highly relevant and impact also corroborated by high level publications. Important also from the societal point.</p>		
<p>A risk model has been generated by WG1 participants by using low-penetrance germline CRC predisposition variants, microbiome and environmental factors and these variables are being tested as predictors for CRC and advanced adenomas. Substantial improvement of the current methods used in CRC screening programs is expected.</p> <p>Related publications are the following:</p> <p>WG1. Thomas et al. Genome-wide Modeling of Polygenic Risk Score</p>	<ul style="list-style-type: none"> • Scientific / Technological • Economic • Societal 	<p>Achieved</p>

<p>in Colorectal Cancer Risk. American Journal of Human Genetics 2020; 107(3):432-444; https://doi.org/10.1016/j.ajhg.2020.07.006.</p> <p>WG1. Krigul KL, et al. Using fecal immunochemical tubes for the analysis of the gut microbiome has the potential to improve colorectal cancer screening. Scientific Reports 2021;11(1):19603. https://doi.org/10.1038/s41598-021-99046-w.</p> <p>WG1. Gumpenberger T, et al. Untargeted Metabolomics Reveals Major Differences in the Plasma Metabolome between Colorectal Cancer and Colorectal Adenomas. Metabolites 2021;11(2):119. https://doi.org/10.3390/metabo11020119</p> <p>WG1. Tarallo S, et al. Stool microRNA profiles reflect different dietary and gut microbiome patterns in healthy individuals. Gut 2022;71:1302-1314. https://doi.org/10.1136/gutjnl-2021-325168.</p> <p>WG1. Fernandez-Rozadilla et al. Multi-omic analysis of 100,204 Europeans and Asians identifies 103 new colorectal cancer risk associations and provides insights into disease etiology. Nature Genetics 2022, in press.</p>		
<p>Validity, relevance and significance (in particular importance and timeliness) of the impact reported by the Action: Very important findings corroborated by top level publications. Very important impact at the medical and societal level.</p>		
<p>CTCs, circulating tumor nucleic acids and exosomes have been tested by participants in WG2 as non-invasive biomarkers for early detection of CRC. They could improve CRC screening by detecting this neoplasm earlier. Health care costs will be reduced by detecting cases at an earlier stage. Patients will have a better prognosis since their cancer will be detected and treated also earlier.</p> <p>Relevant publications are the following:</p> <p>WG2. Marcuello M, et al. Circulating biomarkers for early detection and clinical management of colorectal cancer. Molecular Aspects of Medicine 2019;69:107-122. https://doi.org/10.1016/j.mam.2019.06.002.</p> <p>WG2. Duran-Sanchon et al. Identification and Validation of MicroRNA Profiles in Fecal Samples for Detection of Colorectal Cancer. Gastroenterology 2020; 158(4):947-957; https://doi.org/10.1053/j.gastro.2019.10.005.</p> <p>WG2. Sabo AA, et al. Small Non-Coding RNA Profiling in Plasma Extracellular Vesicles of Bladder Cancer Patients by Next-Generation Sequencing: Expression Levels of miR-126-3p and piR-5936 Increase with Higher Histologic Grades. Cancers 2020;12(6):1507. https://doi.org/10.3390/cancers12061507.</p> <p>WG2. Cervena K, et al. Mutational landscape of plasma cell-free DNA identifies molecular features associated with therapeutic response in patients with colon cancer. A pilot study. Mutagenesis 2021;36(5):358-368. https://doi.org/10.1093/mutage/geab024.</p>	<ul style="list-style-type: none"> • Scientific / Technological • Economic • Societal 	<p>Achieved</p>
<p>Validity, relevance and significance (in particular importance and timeliness) of the impact reported by the Action: Important findings which might impact on the early identification of the metastatic process in CRC.</p>		
<p>Novel approaches in WG3 such as single-cell genomics have been considered tumor heterogeneity. It will permit a better tumor profiling, unraveling new tumor biomarkers with prognosis and predictive value. It represents an improvement in tumor characterization on the line of personalized medicine. Again, patients and health care will be in the end benefited.</p>	<ul style="list-style-type: none"> • Scientific / Technological • Economic • Societal 	<p>Foreseen within two years</p>

A collaborative research study conducted at IDIBAPS (Spain), IDIBELL (Spain) and NKI (The Netherlands) aims at collecting early-stage CRC samples to infer the role of (i) chromosome instability by quantifying DNA double-strand breaks (Dr. Fijneman and Dr. Carvalho, NKI) and (ii) the subclonal distribution of copy-number alterations and aneuploidy burden (Dr. Camps and Dr. Moreno, IDIBAPS and IDIBELL, respectively) to predict the risk of disease recurrence. In addition, we have started a collaboration with Dr. Graham from ICR (UK) to detect copy-number heterogeneity in circulating tumor DNA. Both initiatives will result in highly relevant publications.

Transferring novel tumor biomarkers to the daily-bases clinical practice is the ultimate goal of WG3. In this regard, several undergoing collaborative studies are using genomic tools to assess how circulating tumor cells reproduce the genetic content present in the matched primary tumor (IDIBAPS and Heinrich-Heine-Universität Düsseldorf), how copy-number alterations are responsible of the adenoma progression (NKI, Charles University of Prague and IDIBAPS). Grant applications are currently being under preparation (e.g., HORIZON-MISS-2021-CANCER-02-03 call: Proposal number 101096714, Acronym MOMO) and scientific articles will be submitted for publication.

Related publications are the following:

WG3. Demirkol Canlı S, et al. Evaluation of an aldo-keto reductase gene signature with prognostic significance in colon cancer via activation of epithelial to mesenchymal transition and the p70S6K pathway. *Carcinogenesis* 2020;41(9):1219-1228. <https://doi.org/10.1093/carcin/bgaa072>.

WG3. Galofré C, et al. Tetraploidy-Associated Genetic Heterogeneity Confers Chemo-Radiotherapy Resistance to Colorectal Cancer Cells. *Cancers* 2020;12(5):1118. <https://doi.org/10.3390/cancers12051118>.

WG3. Bogie RMM, et al. Molecular pathways in post-colonoscopy versus detected colorectal cancers: results from a nested case-control study. *Br J Cancer* 2022;126(6):865-873. <https://doi.org/10.1038/s41416-021-01619-z>.

WG3. Martens-de Kemp SR, et al. Overexpression of the miR-17-92 cluster in colorectal adenoma organoids causes a carcinoma-like gene expression signature. *Neoplasia* 2022;32:100820. <https://doi.org/10.1016/j.neo.2022.100820>.

Validity, relevance and significance (in particular importance and timeliness) of the impact reported by the Action: Important findings relevant for the identification of novel biomarkers in CRC.

Innovative CRC treatments such as immunotherapies have been verified by WG4 participants, Introducing immunotherapy as a new (neo-)adjuvant treatment option in the clinical practice is one the ultimate goals of WG4. In this regard, several undergoing collaborative studies are trying to understand what determines responses to cancer immunotherapy (in the neoadjuvant setting) so that: 1) appropriate patient selection can be implemented and 2) additional patients may be sensitized to immune checkpoint blockade.

- Scientific / Technological
- Economic
- Societal

Foreseen two-to-five years

Validity, relevance and significance (in particular importance and timeliness) of the impact reported by the Action: It is credible that between 2-5 years these results might be applied and new therapeutic schemes proposed and applied.

The extent to which the Action has advanced the careers, skills and networks of researchers including ECIs (as described by the Action) is excellent.

General assessment of impacts

The Action's impacts are best described as follows.

Multiple highly significant impacts are reasonably foreseen, at least one of which is already observed [Excellent]

Dissemination and exploitation of Action results (other than co-authored Action publications listed previously)

Dissemination meetings funded by the Action

Action website

<https://www.transcoloncan.eu>

The:

- openness and user-friendliness of the Action website are very good
- content of the Action website (programmes and minutes of all events present, all outputs/deliverables accessible from website) is very good

The Action website was an effective means of disseminating the Action.

Other dissemination activities

The following other dissemination activities reported by the Action were effective and added value

Item/activity	Sergi Castellví-Bel. Oral presentation. Identifying biomarkers through translational research for prevention and stratification of colorectal cancer (TRANSCOLONCAN). COST Action CA16113 meeting 2018. Belgrade (Serbia)
Target Audience	Participants of the COST Action CA16113 “CliniMARK: ‘good biomarker practice’ to increase the number of clinically validated biomarkers”
Outcome of the activity	Interaction of our COST Action network with participants of COST Action CA16113
Hyperlink	https://clinimark.eu/

Item/activity	COST Connect on the future of European cancer research Beating cancer in 2030: Mission impossible? (Brussels, 21 and 22 May 2019)
Target Audience	A wide range of COST Actions are working on different aspects of cancer research and this COST Connect event paved the way towards a closer cooperation between research networks and other relevant stakeholders such as the European Institutions and other organisations in the field. The represented Actions included CA15135 (Multi-target paradigm for innovative ligand identification in the drug discovery process (MuTaLig)), CA15204 (European Platform for Outcomes Research into Perioperative Interventions during Surgery for Cancer), CA17103 (Delivery of Antisense RNA Therapeutics), CA17140 (Cancer nanomedicine - from the bench to the bedside), CA17118 (Identifying Biomarkers Through Translational Research for Prevention and Stratification of Colorectal Cancer) and CA18117 (European network for Gynaecological Rare Cancer research: From Concept to Cure), among others.
Outcome of the activity	This event offered an interactive forum to participants involved in cancer research, in an attempt to identify the current needs and gaps in the field, a prerequisite for achieving effective treatments. Our Action was represented by our Vice-Chair, Dr. Richarda de Voer.
Hyperlink	https://www.cost.eu/news/beating-cancer-in-2030/

Item/activity	The European Researchers' Night 2019 and 2020, funded under the Marie Skłodowska-Curie actions (MSCA).
Target Audience	It is a Europe-wide public event that brings researchers closer to the public.

Outcome of the activity	The Night provides researchers the opportunity to showcase the diversity of science and its impact on citizens' daily lives, and to stimulate interest in research careers – especially among young people. The events highlight how researchers contribute to our society by displaying their work in an interactive and engaging forum. Participants were involved in 2019 in the following events: - MEET, 818910, Italy, www.meetmetonight.it - NOCMOC, 818352, Slovenia, www.nocmoc.eu - SCIMFONICOM2018-19, 818747, Serbia, nocistrazivaca.rs Events involvement for 2020 is being currently arranged.
Hyperlink	https://ec.europa.eu/research/mariecurieactions/actions/european-researchers-night_en

Item/activity	2nd International Congress on Precision Medicine 2019 in Munich (Germany)
Target Audience	Research scientists, biotech companies and stakeholders working in personalized medicine.
Outcome of the activity	The Chair, Sergi Castellvi-Bel, presented a poster with an overview of the Action, aimed at disseminating the network and reaching out to additional interested partners.
Hyperlink	https://www.transcoloncan.eu/news/6/international-congress-on-precision-medicine

Item/activity	27th United European Gastroenterology Week held in Barcelona in 2019
Target Audience	This meeting represents an international forum for clinical practice and research in gastroenterology attended by more than 12,000 participants. The Action was presented within the session "EU funded Cooperation Networks in GI: How to get involved?".
Outcome of the activity	The Chair of the TRANSCOLONCAN COST Action, Sergi Castellvi-Bel, gave a presentation of the Action's aims and ongoing work to help attract additional participants.
Hyperlink	https://ueg.eu/week

Item/activity	Several scientific presentations related to the work being developed by participants within the Action.
Target Audience	Research scientists, biotech companies and stakeholders attending the specified meetings. Specific details about presentations are avoided for concision.
Outcome of the activity	Scientific presentations in the 2019, 2020, 2021 and/or the 2022 editions in the annual meetings of the following international societies: American Society of Human Genetics, European Society of Human Genetics, European Association of Cancer Research, American Association of Cancer Research, International Society for Gastrointestinal Hereditary Tumors (InSIGHT), European Hereditary Tumour Group, European Society of Medical Oncology, ECCO-the European Cancer Conference, European Multidisciplinary Colorectal Cancer Congress (EMCCC), European Consortium 'Care for CMMRD' (C4CMMRD), and Collaborative Group of the Americas on Inherited Colorectal Cancer (CGA-ICC), among others. As a well, presentations of results took place also scientific societies at the national level.
Hyperlink	https://www.eshg.org/index.php?id=europe

Exploitation activities

The following activities to ensure exploitation (use, in particular in a commercial context) of the Action's achievements reported by the Action were effective and added value

Item/activity	Intellectual property (inventors are participants from the Action: Saray Duran-Sanchon; Antoni Castells; Meritxell Gironella)
Target Audience	Commercial exploitation of a research result. Companies interested in liquid biopsy approaches for early detection of colorectal cancer.

Outcome of the activity	Patent request: NON-INVASIVE METHOD FOR THE DIAGNOSIS OR SCREENING OF COLORECTAL CANCER AND/OR PRE-CANCEROUS STAGE THEREOF. REQUEST No: EP19382597.3 DATE: 15/07/2019 ENTITY: IDIBAPS-CIBER-Universitat de Barcelona. COUNTRIES: Europa; International (PCT) PCT application number: PCT/EP2020/069918 PCT FILING DATE: 14/07/2020
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Item/activity	Intellectual property (inventors are participants from the Action: Beatriz Carvalho; Gerrit Meijer)
Target Audience	Commercial exploitation of a research result. Companies interested in biomarker genes for colorectal adenoma screening
Outcome of the activity	Patent application P122194EP00 about biomarker genes for colorectal adenoma screening

Item/activity	Intellectual property (inventors are participants from the Action: Toni Gabaldon; Ester Saus; Olfat Khannous; Sergi Castellvi-Bel)
Target Audience	Commercial exploitation of a research result. Companies interested in biomarkers for colorectal cancer screening
Outcome of the activity	Patent application EP22179747 about a method for screening for colorectal cancer using fecal microbiome profiling

Item/activity	Intellectual property (inventors are participants from the Action: Beatriz Carvalho)
Target Audience	Commercial exploitation of a research result. Companies interested in biomarker genes for colorectal cancer screening
Outcome of the activity	Patent application 2008707;EP13720130.7;14/396,522, NL 2010276;PCT/NL13/50316;15/444,679;EP19201973.5 about protein biomarkers for detection of colorectal cancer

Item/activity	Intellectual property (inventors are participants from the Action: Beatriz Carvalho)
Target Audience	Commercial exploitation of a research result. Companies interested in biomarker genes for colorectal cancer screening in stool
Outcome of the activity	Patent application NL17172531.0;2017-009-02;2017-009-03;2017-009-04;2017-009-05;2017-009-06 about protein biomarkers (II) for detection of colorectal cancer in stool

Item/activity	Intellectual property (inventors are participants from the Action: Beatriz Carvalho)
Target Audience	Commercial exploitation of a research result. Companies interested in biomarker genes for colorectal cancer screening
Outcome of the activity	Patent application EP19187894.1;PCT/NL2020/050482 about progression markers for colorectal cancer monitoring

Assessment of Action dissemination and exploitation

The effectiveness of the Action's dissemination and exploitation approach (other than co-authored publications) is assessed as follows:

The present consortium has involved academic partners and SMEs. There have been 16 SMEs involved and thus the interaction academia and industry has been improving.

Assessment of Action dissemination and exploitation activities:

There were many highly effective Action activities focusing on dissemination of Action results [Excellent]
Most Action activities focusing on exploitation of Action results were effective [Good]

Action Success(es)

The following table shows the success(es) reported by the Action and the Action Rapporteur's comment.

Success reported by Action	Action Rapporteur comment
<p>The uprising of ITC researchers. It has been very rewarding to witness the progress in the field of study of some researchers from ITC countries. It should be noted that the enthusiasm and active participation in the activities organized by this network was excellent regarding ITC participants, usually even more active than from those participants from non-ITC. It should be highlighted that ITC participants from Czech Republic, Estonia, Malta, North Macedonia, Poland, Portugal, Romania, Serbia and Turkey were among the more interested and active. With two specific examples, it has been nice to witness their positive progress in the last four years by achieving important research results (https://www.nature.com/articles/s41598-021-99046-w, Estonia) or obtaining relevant EU funding (Twinning STEPUPPIORS in Serbia). ITC participants acted satisfactorily as WG chairs, leading the Science Communication committee, the STSM committee, the Training schools committee. Also, with the intention of bringing excellent science to these locations, about half of meetings were organized with success in ITC countries (MC+WGs meeting in Skopje, North Macedonia; WG4 meeting in Krakow, Poland; MC+WG2 meeting in Belgrade, Serbia; MC+WG3 meeting in Bucharest, Romania). It is also important to highlight that being part of this Action helped ITC participants to obtain national funding.</p>	<p>I fully agree on this success story where ITC researchers might reach a very high level of competence testified by top journals common publications.</p>
<p>No more gender gap in science was a reality. Regarding gender balance, it was widely promoted during the lifetime of TRANSCOLONCAN. There were 295 women participants at the end of the network, corresponding to 59.6 % (295/495). Gender balance was also endorsed in management roles, and women were appointed as Vice-chair of the Action, WG leaders (WG1, WG2, WG4) and WG co-leaders (all WGs), Committees leaders (science communication, research funding, SME) and Committees co-leaders (all committees). More details can be found at https://www.transcoloncan.eu/management/. Also, when accepting participants in activities and meetings, gender balance was also observed. Most speakers at meetings were women. In general, it can be considered that women were more active than men, and activities and meetings had a higher percentage of them. Indeed, it should be highlighted that women were very active in our consortium and they are major contributors to its success. One the major highlights of this Action is the success of the MSCA Doctoral Network ColoMARK proposal on liquid biopsies led by Ceres Fernandez-Rozadilla, a young female researcher from Spain and with the collaboration of other participants of this network (https://www.transcoloncan.eu/news/24/colomark-new-msca-network).</p>	<p>Again I agree that this action successfully reached gender equality in numbers and quality as also testified by new projects starting.</p>

Other matters

Difficulties in implementing the Action

The Action Rapporteur made the following observations regarding difficulties in implementing the Action:

No concerns

Suggestions for improvements to COST framework / procedures

The Action Rapporteur made the following suggestions for changes to the COST framework:

The consortium is already very well set.

Emerging topics / developments in the field of the Action

The Action reported the following emerging topics / developments in the field of the Action.

- During the development of this COST Action, WG2 (liquid biopsies) and WG3 (tumor profiling) could be considered the groups with highest interest among participants. Regarding emerging topics in the field of CRC, this Action witnessed the increasing interest in the last years for disciplines like microbiome, metabolomics and non-invasive or liquid biopsies. Microbiota studies were developed by some participants in the network but metabolomics was of interest for a minority of participants. Most likely, it does not reflect the real situation outside the consortium but simply a bias in the recruitment of these specialists in this group. On the other hand, the field of liquid biopsies did attract participants and can be considered the emerging WG in the Action, with international scientific societies starting and a COST Action proposal in the near future.

The Action Rapporteur made the following comment on the emerging topics / developments in the field reported by the Action.

I fully agree that the emerging identified topics might be very medically relevant in view of early diagnosis, identification of potential molecular risk and early identification of the metastatic processes.

Action Rapporteur

This Final Assessment Report was submitted on 2022-12-11 by:

Prof Lucia Altucci

Università degli Studi della Campania Vanvitelli

Italy

Annex 1: List of publications

The Action reported 100 publications on the topic of the Action, co-authored by at least two Action participants from two countries participating in the Action, and for which the Action networking was necessary.

Co-authored Action publications - peer-reviewed

Title	Update on genetic predisposition to colorectal cancer and polyposis
Authors	Laura Valle; Richarda M. de Voer; Yael Goldberg; Wenche Sjursen; Asta Försti; Clara Ruiz-Ponte; Trinidad Caldes; Pilar Garré; Maren F. Olsen; Margareta Nordling; Sergi Castellvi-Bel; Kari Hemminki
DOI	doi:10.1016/j.mam.2019.03.001
Type	Journal article
Published in	Molecular Aspects of Medicine
Published by	Elsevier BV
ISSN	0098-2997
Subjects	Clinical Biochemistry; Molecular Medicine; Biochemistry; Molecular Biology; General Medicine
Links	https://api.elsevier.com/content/article/PII:S0098299719300044?httpAccept=text/xml ; https://api.elsevier.com/content/article/PII:S0098299719300044?httpAccept=text/plain
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Title	Circulating biomarkers for early detection and clinical management of colorectal cancer
Authors	María Marcuello; Veronika Vymetalkova; Rui P.L. Neves; Saray Duran-Sanchon; Hege Marie Vedeld; Emma Tham; Guus van Dalum; Georg Flügen; Vanesa Garcia-Barberan; Remond JA. Fijneman; Antoni Castells; Pavel Vodicka; Guro E. Lind; Nikolas H. Stoecklein; Ellen Heitzer; Meritxell Gironella
DOI	doi:10.1016/j.mam.2019.06.002
Type	Journal article
Published in	Molecular Aspects of Medicine
Published by	Elsevier BV
ISSN	0098-2997
Links	https://api.elsevier.com/content/article/PII:S0098299719300093?httpAccept=text/xml ; https://api.elsevier.com/content/article/PII:S0098299719300093?httpAccept=text/plain
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Title	Approaches to functionally validate candidate genetic variants involved in colorectal cancer predisposition
Authors	Laia Bonjoch; Pilar Mur; Coral Arnau-Collell; Gardenia Vargas-Parra; Bahar Shamloo; Sebastià Franch-Expósito; Marta Pineda; Gabriel Capellà; Batu Erman; Sergi Castellví-Bel
DOI	doi:10.1016/j.mam.2019.03.004
Type	Journal article
Published in	Molecular Aspects of Medicine
Published by	Elsevier BV
ISSN	0098-2997

Subjects	Clinical Biochemistry; Molecular Medicine; Biochemistry; Molecular Biology; General Medicine
Links	https://api.elsevier.com/content/article/PII:S0098299719300068?httpAccept=text/xml ; https://api.elsevier.com/content/article/PII:S0098299719300068?httpAccept=text/plain
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Title	Cumulative Burden of Colorectal Cancer–Associated Genetic Variants Is More Strongly Associated With Early-Onset vs Late-Onset Cancer
Authors	Alexi N. Archambault ; Yu-Ru Su ; Jihyoun Jeon; Minta Thomas ; Yi Lin; David V. Conti; Aung Ko Win ; Lori C. Sakoda ; Iris Lansdorp-Vogelaar; Elisabeth F.P. Peterse ; Ann G. Zauber; David Duggan; Andreana N. Holowatyj ; Jeroen R. Huyghe ; Hermann Brenner; Michelle Cotterchio; Stéphane Bézieau; Stephanie L. Schmit ; Christopher K. Edlund; Melissa C. Southey ; Robert J. MacInnis ; Peter T. Campbell; Jenny Chang-Claude ; Martha L. Slattery ; Andrew T. Chan; Amit D. Joshi; Mingyang Song; Yin Cao; Michael O. Woods; Emily White; Stephanie J. Weinstein ; Cornelia M. Ulrich ; Michael Hoffmeister; Stephanie A. Bien ; Tabitha A. Harrison ; Jochen Hampe ; Christopher I. Li; Clemens Schafmayer; Kenneth Offit; Paul D. Pharoah ; Victor Moreno ; Annika Lindblom; Alicja Wolk ; Anna H. Wu; Li Li; Marc J. Gunter; Andrea Gsur ; Temitope O. Keku ; Rachel Pearlman ; D. Timothy Bishop ; Sergi Castellví-Bel; Leticia Moreira; Pavel Vodicka; Ellen Kampman ; Graham G. Giles ; Demetrius Albanes; John A. Baron; Sonja I. Berndt; Stefanie Brezina ; Stephan Buch; Daniel D. Buchanan ; Antonia Trichopoulos; Gianluca Severi ; María-Dolores Chirlaque; María-José Sánchez; Domenico Palli ; Tilman Kühn; Neil Murphy; Amanda J. Cross ; Andrea N. Burnett-Hartman; Stephen J. Chanock; Albert de la Chapelle ; Douglas F. Easton; Faye Elliott ; Dallas R. English ; Edith J.M. Feskens ; Liesel M. FitzGerald ; Phyllis J. Goodman; John L. Hopper; Thomas J. Hudson ; David J. Hunter; Eric J. Jacobs; Corinne E. Joshu ; Sébastien Küry; Sanford D. Markowitz; Roger L. Milne ; Elizabeth A. Platz ; Gad Rennert ; Hedy S. Rennert; Fredrick R. Schumacher ; Robert S. Sandler; Daniela Seminara; Catherine M. Tangen; Stephen N. Thibodeau; Amanda E. Toland ; Franzel J.B. van Duijnhoven; Kala Visvanathan; Ludmila Vodickova; John D. Potter ; Satu Männistö; Korbinian Weigl; Jane Figueiredo; Vicente Martín; Susanna C. Larsson ; Patrick S. Parfrey; Wen-Yi Huang ; Heinz-Josef Lenz; Jose E. Castelao; Manuela Gago-Dominguez ; Victor Muñoz-Garzón; Christoph Mancao; Christopher A. Haiman; Lynne R. Wilkens; Erin Siegel; Elizabeth Barry ; Ban Younghusband; Bethany Van Guelpen ; Sophia Harlid ; Anne Zeleniuch-Jacquotte; Peter S. Liang ; Mengmeng Du; Graham Casey; Noralane M. Lindor; Loic Le Marchand; Steven J. Gallinger; Mark A. Jenkins ; Polly A. Newcomb; Stephen B. Gruber; Robert E. Schoen ; Heather Hampel ; Douglas A.

DOI Type Published in Published by ISSN Subject Links	Corley; Li Hsu; Ulrike Peters; Richard B. Hayes doi:10.1053/j.gastro.2019.12.012 Journal article Gastroenterology Elsevier BV 0016-5085 Gastroenterology https://api.elsevier.com/content/article/PII:S0016508519419379?httpAccept=text/xml ; https://api.elsevier.com/content/article/PII:S0016508519419379?httpAccept=text/plain
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Title Authors	Colorectal cancer genetic variants are also associated with serrated polyposis syndrome susceptibility Coral Arnau-Collell; Yasmin Soares de Lima; Marcos Díaz-Gay ; Jenifer Muñoz; Sabela Carballal; Laia Bonjoch; Leticia Moreira; Juan José Lozano; Teresa Ocaña; Miriam Cuatrecasas; Aranzazu Díaz de Bustamante; Antoni Castells; Gabriel Capellà; Luis Bujanda; Joaquin Cubiella; Daniel Rodríguez-Alcalde; Francesc Balaguer; Clara Ruiz-Ponte; Laura Valle; Victor Moreno; Sergi Castellvi-Bel doi:10.1136/jmedgenet-2019-106374 Journal article Journal of Medical Genetics BMJ 0022-2593 ; 1468-6244 Genetics(clinical); Genetics https://syndication.highwire.org/content/doi/10.1136/jmedgenet-2019-106374
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Title Authors	Loss of enhancer of zeste homologue 2 (EZH2) at tumor invasion front is correlated with higher aggressiveness in colorectal cancer cells Julian Böhm; Julienne Kathrin Muenzner; Aylin Caliskan; Benardina Ndreshkjana; Katharina Erlenbach-Wünsch; Susanne Merkel; Roland Croner; Tilman T. Rau; Carol Immanuel Geppert; Arndt Hartmann; Adriana Vial Roehe; Regine Schneider-Stock doi:10.1007/s00432-019-02977-1 Journal article Journal of Cancer Research and Clinical Oncology Springer Science and Business Media LLC 0171-5216 ; 1432-1335 Cancer Research; Oncology; General Medicine http://link.springer.com/content/pdf/10.1007/s00432-019-02977-1.pdf ; http://link.springer.com/article/10.1007/s00432-019-02977-1/fulltext.html
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Title Authors	Germline Mutations in FAF1 Are Associated With Hereditary Colorectal Cancer Laia Bonjoch ; Sebastià Franch-Expósito; Pilar Garre ;

<p>DOI Type Published in Published by ISSN Subject Links</p>	<p>Sami Belhadj; Jenifer Muñoz; Coral Arnau-Collell; Marcos Díaz-Gay; Anna Gratacós-Mulleras; Giulia Raimondi; Clara Esteban-Jurado; Yasmin Soares de Lima; Cristina Herrera-Pariente; Miriam Cuatrecasas; Teresa Ocaña; Antoni Castells; Cristina Fillat; Gabriel Capellá; Francesc Balaguer; Trinidad Caldés; Laura Valle; Sergi Castellví-Bel doi:10.1053/j.gastro.2020.03.015 Journal article Gastroenterology Elsevier BV 0016-5085 Gastroenterology https://api.elsevier.com/content/article/PII:S001650852030336X?httpAccept=text/xml; https://api.elsevier.com/content/article/PII:S001650852030336X?httpAccept=text/plain</p>
<hr/>	
<p>Title Authors DOI Type Published in Published by ISSNs Links</p>	<p>Epistatic effect of TLR3 and cGAS□STING□IKKε□TBK1□IFN signaling variants on colorectal cancer risk Calogerina Catalano; Miguel Inacio Silva Filho; Christoph Frank; Shun Lu; Katerina Jiraskova; Veronika Vymetalkova; Miroslav Levy; Vaclav Liska; Ondrej Vycital; Alessio Naccarati; Ludmila Vodickova; Kari Hemminki; Pavel Vodicka; Alexander N. R. Weber; Asta Försti doi:10.1002/cam4.2804 Journal article Cancer Medicine Wiley 2045-7634; 2045-7634 https://api.wiley.com/onlinelibrary/tdm/v1/articles/10.1002%2Fcam4.2804; https://onlinelibrary.wiley.com/doi/pdf/10.1002/cam4.2804; https://onlinelibrary.wiley.com/doi/full-xml/10.1002/cam4.2804</p>
<hr/>	
<p>Title Authors DOI Type Published in Published by ISSN Links</p>	<p>Diagnostic and prognostic impact of cell-free DNA in human cancers: Systematic review Klara Cervena; Pavel Vodicka; Veronika Vymetalkova doi:10.1016/j.mrrev.2019.05.002 Journal article Mutation Research/Reviews in Mutation Research Elsevier BV 1383-5742 https://api.elsevier.com/content/article/PII:S1383574219300080?httpAccept=text/xml; https://api.elsevier.com/content/article/PII:S1383574219300080?httpAccept=text/plain</p>
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<p>Title</p>	<p>Integrated Analysis of Germline and Tumor DNA Identifies New Candidate Genes Involved in Familial</p>

<p>Authors</p>	<p>Colorectal Cancer</p> <p>Marcos Díaz-Gay; Sebastià Franch-Expósito; Coral Arnau-Collell; Solip Park; Fran Supek; Jenifer Muñoz; Laia Bonjoch; Anna Gratacós-Mulleras; Paula Sánchez-Rojas; Clara Esteban-Jurado; Teresa Ocaña; Miriam Cuatrecasas; Maria Vila-Casadesús; Juan Lozano; Genis Parra; Steve Laurie; Sergi Beltran; Antoni Castells; Luis Bujanda; Joaquín Cubiella; Francesc Balaguer; Sergi Castellví-Bel doi:10.3390/cancers11030362</p>
<p>DOI</p> <p>Type</p> <p>Published in</p> <p>Published by</p> <p>ISSN</p> <p>Subjects</p> <p>Link</p>	<p>Journal article</p> <p>Cancers</p> <p>MDPI AG</p> <p>2072-6694</p> <p>Cancer Research; Oncology</p> <p>https://www.mdpi.com/2072-6694/11/3/362/pdf</p>
<hr/>	
<p>Title</p>	<p>Exosomal microRNAs and other non-coding RNAs as colorectal cancer biomarkers: a review</p>
<p>Authors</p>	<p>Antonio Francavilla; Szimonetta Turoczi; Sonia Tarallo; Pavel Vodicka; Barbara Pardini; Alessio Naccarati doi:10.1093/mutage/gez038</p>
<p>DOI</p> <p>Type</p> <p>Published in</p> <p>Published by</p> <p>ISSNs</p> <p>Subjects</p>	<p>Journal article</p> <p>Mutagenesis</p> <p>Oxford University Press (OUP)</p> <p>0267-8357; 1464-3804</p> <p>Toxicology; Genetics(clinical); Genetics; Health, Toxicology and Mutagenesis</p>
<p>Link</p>	<p>http://academic.oup.com/mutage/article-pdf/35/3/243/33484802/gez038.pdf</p>
<hr/>	
<p>Title</p>	<p>Centrosome reduction in newly-generated tetraploid cancer cells obtained by separase depletion</p>
<p>Authors</p>	<p>Claudia Galofré; Elena Asensio; Maria Ubach; Irianna M. Torres; Isabel Quintanilla; Antoni Castells; Jordi Camps doi:10.1038/s41598-020-65975-1</p>
<p>DOI</p> <p>Type</p> <p>Published in</p> <p>Published by</p> <p>ISSN</p> <p>Subject</p> <p>Links</p>	<p>Journal article</p> <p>Scientific Reports</p> <p>Springer Science and Business Media LLC</p> <p>2045-2322</p> <p>Multidisciplinary</p> <p>http://www.nature.com/articles/s41598-020-65975-1.pdf; http://www.nature.com/articles/s41598-020-65975-1</p>
<hr/>	
<p>Title</p>	<p>Tetraploidy-Associated Genetic Heterogeneity Confers Chemo-Radiotherapy Resistance to Colorectal Cancer Cells</p>
<p>Authors</p>	<p>Claudia Galofré; Öykü Gönül Geyik; Elena Asensio; Darawalee Wangsa; Daniela Hirsch; Carolina Parra; Jordi Saez; Meritxell Mollà; Zeynep Yüce; Antoni Castells; Thomas Ried; Jordi Camps</p>

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 Type Journal article
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 ISSN [2072-6694](https://doi.org/10.3390/cancers12051118)
 Subjects Cancer Research; Oncology
 Link <https://www.mdpi.com/2072-6694/12/5/1118/pdf>

Title Mutational Signature Analysis Reveals NTHL1 Deficiency to Cause a Multi-tumor Phenotype
 Authors Judith E. Grolleman; Richarda M. de Voer; Fadwa A. Elsayed; Maartje Nielsen; Robbert D.A. Weren; Claire Palles; Marjolijn J.L. Ligtenberg; Janet R. Vos; Sanne W. ten Broeke; Noel F.C.C. de Miranda; Renske A. Kuiper; Eveline J. Kamping; Erik A.M. Jansen; M. Elisa Vink-Börger; Isabell Popp; Alois Lang; Isabel Spier; Robert Hüneburg; Paul A. James; Na Li; Marija Staninova; Helen Lindsay; David Cockburn; Olivera Spasic-Boskovic; Mark Clendenning; Kevin Sweet; Gabriel Capellá; Wenche Sjursen; Hildegunn Høberg-Vetti; Marjolijn C. Jongmans; Kornelia Neveling; Ad Geurts van Kessel; Hans Morreau; Frederik J. Hes; Rolf H. Sijmons; Hans K. Schackert; Clara Ruiz-Ponte; Dagmara Dymerska; Jan Lubinski; Barbara Rivera; William D. Foulkes; Ian P. Tomlinson; Laura Valle; Daniel. D. Buchanan; Sue Kenwrick; Julian Adlard; Aleksandar J. Dimovski; Ian G. Campbell; Stefan Aretz; Detlev Schindler; Tom van Wezel; Nicoline Hoogerbrugge; Roland P. Kuiper

DOI [doi:10.1016/j.ccell.2018.12.011](https://doi.org/10.1016/j.ccell.2018.12.011)
 Type Journal article
 Published in Cancer Cell
 Published by Elsevier BV
 ISSN [1535-6108](https://doi.org/10.1016/j.ccell.2018.12.011)
 Subjects Cell Biology; Cancer Research; Oncology
 Links <https://api.elsevier.com/content/article/PII:S153561081830583X?httpAccept=text/xml>;
<https://api.elsevier.com/content/article/PII:S153561081830583X?httpAccept=text/plain>

Title Somatic mutational signatures in polyposis and colorectal cancer
 Authors Judith E. Grolleman; Marcos Díaz-Gay; Sebastià Franch-Expósito; Sergi Castellví-Bel; Richarda M. de Voer

DOI [doi:10.1016/j.mam.2019.05.002](https://doi.org/10.1016/j.mam.2019.05.002)
 Type Journal article
 Published in Molecular Aspects of Medicine
 Published by Elsevier BV
 ISSN [0098-2997](https://doi.org/10.1016/j.mam.2019.05.002)
 Subjects Clinical Biochemistry; Molecular Medicine; Biochemistry; Molecular Biology; General Medicine
 Links <https://api.elsevier.com/content/article/PII:S009829971930007X?httpAccept=text/xml>;
<https://api.elsevier.com/content/article/PII:S009829971930007X?httpAccept=text/plain>

Title	The activating transcription factor 2: an influencer of cancer progression
Authors	Kerstin Huebner; Jan Procházka; Ana C Monteiro; Vijayalakshmi Mahadevan; Regine Schneider-Stock
DOI	doi:10.1093/mutage/gez041
Type	Journal article
Published in	Mutagenesis
Published by	Oxford University Press (OUP)
ISSNs	0267-8357 ; 1464-3804
Subjects	Toxicology; Genetics(clinical); Genetics; Health, Toxicology and Mutagenesis
Link	http://academic.oup.com/mutage/article-pdf/34/5-6/375/31571140/gez041.pdf
<hr/>	
Title	Proteins in stool as biomarkers for non-invasive detection of colorectal adenomas with high risk of progression
Authors	Malgorzata A Komor ; Linda JW Bosch; Veerle MH Coupé; Christian Rausch; Thang V Pham; Sander R Piersma; Sandra Mongera; Chris JJ Mulder; Evelien Dekker; Ernst J Kuipers; Mark A Wiel; Beatriz Carvalho; Remond JA Fijneman ; Connie R Jimenez; Gerrit A Meijer; Meike Wit
DOI	doi:10.1002/path.5369
Type	Journal article
Published in	The Journal of Pathology
Published by	Wiley
ISSNs	0022-3417 ; 1096-9896
Subject	Pathology and Forensic Medicine
Links	https://onlinelibrary.wiley.com/doi/pdf/10.1002/path.5369 ; https://onlinelibrary.wiley.com/doi/full-xml/10.1002/path.5369
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Title	EMT transcription factor ZEB1 alters the epigenetic landscape of colorectal cancer cells
Authors	Pablo Lindner; Sushmita Paul; Markus Eckstein; Chuanpit Hampel; Julianne K. Muenzner; Katharina Erlenbach-Wuensch; Husayn P. Ahmed ; Vijayalakshmi Mahadevan; Thomas Brabletz; Arndt Hartmann; Julio Vera; Regine Schneider-Stock
DOI	doi:10.1038/s41419-020-2340-4
Type	Journal article
Published in	Cell Death & Disease
Published by	Springer Science and Business Media LLC
ISSN	2041-4889
Subjects	Immunology; Cell Biology; Cancer Research; Cellular and Molecular Neuroscience
Links	http://www.nature.com/articles/s41419-020-2340-4.pdf ; http://www.nature.com/articles/s41419-020-2340-4
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Title	Systematic meta-analyses, field synopsis and global assessment of the evidence of genetic association studies in colorectal cancer

Authors

Zahra Montazeri; Xue Li; Christine Nyiraneza; Xiangyu Ma; Maria Timofeeva; Victoria Svinti; Xiangrui Meng; Yazhou He; Yacong Bo; Samuel Morgan; Sergi Castellví-Bel; Clara Ruiz-Ponte; [Ceres Fernández-Rozadilla](#); Ángel Carracedo; Antoni Castells; Timothy Bishop; [Daniel Buchanan](#); Mark A Jenkins; Temitope O Keku; Annika Lindblom; Fränzel J B van Duijnhoven; Anna Wu; Susan M Farrington; Malcolm G Dunlop; Harry Campbell; [Evropi Theodoratou](#); [Wei Zheng](#); [Julian Little](#)
[doi:10.1136/gutjnl-2019-319313](https://doi.org/10.1136/gutjnl-2019-319313)

DOI

Type

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Journal article

Gut

BMJ

[0017-5749](#); [1468-3288](#)

Gastroenterology

<https://syndication.highwire.org/content/doi/10.1136/gutjnl-2019-319313>

Title

Combination of 5-fluorouracil and thymoquinone targets stem cell gene signature in colorectal cancer cells

Authors

Benardina Ndreshkjana; Aysun Çapci; Volker Klein; Pithi Chanvorachote; Julienne K. Muenzner; Kerstin Huebner; Sara Steinmann; Katharina Erlenbach-Wuensch; Carol I. Geppert; Abbas Agaimy; Farah Ballout; Chirine El-Baba; Hala Gali-Muhtasib; Adriana Vial Roehe; Arndt Hartmann; [Svetlana B. Tsogoeva](#); Regine Schneider-Stock

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[doi:10.1038/s41419-019-1611-4](https://doi.org/10.1038/s41419-019-1611-4)

Journal article

Cell Death & Disease

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[2041-4889](#)

Immunology; Cell Biology; Cancer Research; Cellular and Molecular Neuroscience

<http://www.nature.com/articles/s41419-019-1611-4.pdf> ; <http://www.nature.com/articles/s41419-019-1611-4>

Title

Epigenetic Regulation of p21cip1/waf1 in Human Cancer

Authors

Matthias Ocker; Samar Al Bitar; Ana Carolina Monteiro; Hala Gali-Muhtasib; Regine Schneider-Stock

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Type

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Link

[doi:10.3390/cancers11091343](https://doi.org/10.3390/cancers11091343)

Journal article

Cancers

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Cancer Research; Oncology

<https://www.mdpi.com/2072-6694/11/9/1343/pdf>

Title

Physical activity and risks of breast and colorectal cancer: a Mendelian randomisation analysis

Authors

Nikos Papadimitriou; Niki Dimou; [Konstantinos K. Tsilidis](#); Barbara Banbury; [Richard M. Martin](#); [Sarah J. Lewis](#); Nabila Kazmi; Timothy M. Robinson; Demetrius Albanes; Krasimira Aleksandrova; Sonja I. Berndt; [D. Timothy Bishop](#); Hermann Brenner; [Daniel D. Buchanan](#); Bas Bueno-de-Mesquita; Peter T. Campbell; Sergi Castellví-Bel; [Andrew T. Chan](#); Jenny Chang-Claude; Merete Ellingjord-Dale; Jane C. Figueiredo; Steven J. Gallinger; [Graham G. Giles](#); Edward Giovannucci; Stephen B. Gruber; [Andrea Gsur](#); [Jochen Hampe](#); [Heather Hampel](#); [Sophia Harlid](#); [Tabitha A. Harrison](#); Michael Hoffmeister; John L. Hopper; Li Hsu; [José María Huerta](#); [Jeroen R. Huyghe](#); [Mark A. Jenkins](#); Temitope O. Keku; Tilman Kühn; [Carlo La Vecchia](#); Loic Le Marchand; Christopher I. Li; Li Li; Annika Lindblom; Noralane M. Lindor; Brigid Lynch; Sanford D. Markowitz; [Giovanna Masala](#); Anne M. May; [Roger Milne](#); Evelyn Monninkhof; Lorena Moreno; [Victor Moreno](#); [Polly A. Newcomb](#); Kenneth Offit; [Vittorio Perduca](#); [Paul D. P. Pharoah](#); Elizabeth A. Platz; [John D. Potter](#); [Gad Rennert](#); Elio Riboli; Maria-Jose Sánchez; [Stephanie L. Schmit](#); [Robert E. Schoen](#); Gianluca Severi; Sabina Sieri; Martha L. Slattery; Mingyang Song; Catherine M. Tangen; Stephen N. Thibodeau; Ruth C. Travis; Antonia Trichopoulou; Cornelia M. Ulrich; Franzel J. B. van Duijnhoven; [Bethany Van Guelpen](#); Pavel Vodicka; Emily White; [Alicja Wolk](#); Michael O. Woods; Anna H. Wu; [Ulrike Peters](#); Marc J. Gunter; [Neil Murphy](#)
[doi:10.1038/s41467-020-14389-8](https://doi.org/10.1038/s41467-020-14389-8)

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Type

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Subjects

Journal article

Nature Communications

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[2041-1723](#)

General Biochemistry, Genetics and Molecular Biology; General Physics and Astronomy; General Chemistry

Links

<http://www.nature.com/articles/s41467-020-14389-8.pdf>;

<http://www.nature.com/articles/s41467-020-14389-8>

Title

Noncoding RNAs in Extracellular Fluids as Cancer Biomarkers: The New Frontier of Liquid Biopsies

Authors

[Barbara Pardini](#); Alexandru Anton Sabo; Giovanni Birolo; George Adrian Calin

DOI

[doi:10.3390/cancers11081170](https://doi.org/10.3390/cancers11081170)

Type

Journal article

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Cancers

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ISSN

[2072-6694](#)

Subjects

Cancer Research; Oncology

Link

<https://www.mdpi.com/2072-6694/11/8/1170/pdf>

Title

The landscape of genomic copy number alterations in colorectal cancer and their consequences on gene expression levels and disease outcome

<p>Authors</p> <p>DOI</p> <p>Type</p> <p>Published in</p> <p>Published by</p> <p>ISSN</p> <p>Subjects</p> <p>Links</p>	<p>Thomas Ried; Gerrit A. Meijer; David J. Harrison; Godfrey Grech; Sebastià Franch-Expósito; Romina Briffa; Beatriz Carvalho; Jordi Camps</p> <p>doi:10.1016/j.mam.2019.07.007</p> <p>Journal article</p> <p>Molecular Aspects of Medicine</p> <p>Elsevier BV</p> <p>0098-2997</p> <p>Clinical Biochemistry; Molecular Medicine; Biochemistry; Molecular Biology; General Medicine</p> <p>https://api.elsevier.com/content/article/PII:S0098299719300354?httpAccept=text/xml;</p> <p>https://api.elsevier.com/content/article/PII:S0098299719300354?httpAccept=text/plain</p>
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<p>Title</p> <p>Authors</p> <p>DOI</p> <p>Type</p> <p>Published in</p> <p>Published by</p> <p>ISSN</p> <p>Links</p>	<p>Microbiome and colorectal cancer: Roles in carcinogenesis and clinical potential</p> <p>Ester Saus; Susana Iraola-Guzmán; Jesse R. Willis; Anna Brunet-Vega; Toni Gabaldón</p> <p>doi:10.1016/j.mam.2019.05.001</p> <p>Journal article</p> <p>Molecular Aspects of Medicine</p> <p>Elsevier BV</p> <p>0098-2997</p> <p>https://api.elsevier.com/content/article/PII:S0098299719300329?httpAccept=text/xml;</p> <p>https://api.elsevier.com/content/article/PII:S0098299719300329?httpAccept=text/plain</p>
<hr/>	
<p>Title</p> <p>Authors</p> <p>DOI</p> <p>Type</p> <p>Published in</p> <p>Published by</p> <p>ISSNs</p> <p>Subjects</p> <p>Link</p>	<p>The missing heritability of familial colorectal cancer</p> <p>Stephanie A Schubert; Hans Morreau; Noel F C C de Miranda; Tom van Wezel</p> <p>doi:10.1093/mutage/gez027</p> <p>Journal article</p> <p>Mutagenesis</p> <p>Oxford University Press (OUP)</p> <p>0267-8357; 1464-3804</p> <p>Toxicology; Genetics(clinical); Genetics; Health, Toxicology and Mutagenesis</p> <p>http://academic.oup.com/mutage/article-pdf/35/3/221/33484745/gez027.pdf</p>
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<p>Title</p> <p>Authors</p> <p>DOI</p> <p>Type</p> <p>Published in</p> <p>Published by</p> <p>ISSN</p> <p>Subjects</p>	<p>Colorectal Adenomas—Genetics and Searching for New Molecular Screening Biomarkers</p> <p>Anna Siskova; Klara Cervena; Jan Kral; Tomas Hucl; Pavel Vodicka; Veronika Vymetalkova</p> <p>doi:10.3390/ijms21093260</p> <p>Journal article</p> <p>International Journal of Molecular Sciences</p> <p>MDPI AG</p> <p>1422-0067</p> <p>Physical and Theoretical Chemistry; Inorganic Chemistry; Organic Chemistry; Spectroscopy; Molecular Biology; Catalysis; General Medicine;</p>

Link	Computer Science Applications https://www.mdpi.com/1422-0067/21/9/3260/pdf
Title	DAPK1 loss triggers tumor invasion in colorectal tumor cells
Authors	Sara Steinmann ; Philipp Kunze; Chuanpit Hampel; Markus Eckstein; Jesper Bertram Bramsen; Julienne K. Muenzner; Birgitta Carlé; Benardina Ndreshkjana; Stephan Kemenes; Pierluigi Gasparini; Oliver Friedrich; Claus Andersen ; Carol Geppert; Shengbao Wang; Ilker Eyupoglu; Tobias Bäuerle; Arndt Hartmann; Regine Schneider-Stock
DOI	doi:10.1038/s41419-019-2122-z
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Published in	Cell Death & Disease
Published by	Springer Science and Business Media LLC
ISSN	2041-4889
Subjects	Immunology; Cell Biology; Cancer Research; Cellular and Molecular Neuroscience
Links	http://www.nature.com/articles/s41419-019-2122-z.pdf ; http://www.nature.com/articles/s41419-019-2122-z
Title	Using linkage studies combined with whole-exome sequencing to identify novel candidate genes for familial colorectal cancer
Authors	Claudio Toma; Marcos Díaz-Gay; Sebastià Franch-Expósito; Coral Arnau-Collell; Bronwyn Overs; Jenifer Muñoz; Laia Bonjoch; Yasmin Soares de Lima; Teresa Ocaña; Miriam Cuatrecasas; Antoni Castells; Luis Bujanda; Francesc Balaguer; Joaquín Cubiella ; Trinidad Caldés; Janice M. Fullerton; Sergi Castellví-Bel
DOI	doi:10.1002/ijc.32683
Type	Journal article
Published in	International Journal of Cancer
Published by	Wiley
ISSNs	0020-7136 ; 1097-0215
Subjects	Cancer Research; Oncology
Links	https://api.wiley.com/onlinelibrary/tdm/v1/articles/10.1002%2Fijc.32683 ; https://onlinelibrary.wiley.com/doi/pdf/10.1002/ijc.32683 ; https://onlinelibrary.wiley.com/doi/full-xml/10.1002/ijc.32683
Title	IBD-Associated Dysplastic Lesions Show More Chromosomal Instability Than Sporadic Adenomas
Authors	Linda K Wanders; Martijn Cordes; Quirinus Voorham; Daoud Sie; Sara D de Vries; Geert R A M d'Haens; Nanne K H de Boer; Bauke Ylstra ; Nicole C T van Grieken; Gerrit A Meijer; Evelien Dekker; Beatriz Carvalho
DOI	doi:10.1093/ibd/izz171
Type	Journal article

<p>Published in Published by ISSNs Subjects Link</p>	<p>Inflammatory Bowel Diseases Oxford University Press (OUP) 1078-0998; 1536-4844 Immunology and Allergy; Gastroenterology http://academic.oup.com/ibdjournal/article-pdf/26/2/167/31717876/izz171.pdf</p>
<hr/>	
<p>Title Authors DOI Type Published in Published by ISSNs Subjects Link</p>	<p>Expression quantitative trait loci in ABC transporters are associated with survival in 5-FU treated colorectal cancer patients Veronika Vymetalkova; Fabio Rosa; Simona Susova; Petra Bendova; Miroslav Levy; Tomas Buchler; Jan Kral; Linda Bartu; Ludmila Vodickova; David J Hughes; Pavel Soucek; Alessio Naccarati; Rajiv Kumar; Pavel Vodicka; Barbara Pardini doi:10.1093/mutage/gez050 Journal article Mutagenesis Oxford University Press (OUP) 0267-8357; 1464-3804 Toxicology; Genetics(clinical); Genetics; Health, Toxicology and Mutagenesis http://academic.oup.com/mutage/article-pdf/35/3/273/33484889/gez050.pdf</p>
<hr/>	
<p>Title Authors DOI Type Published in Published by ISSN Links</p>	<p>DNA methylation and chromatin modifiers in colorectal cancer Veronika Vymetalkova; Pavel Vodicka; Sona Vodenkova; Sergio Alonso; Regine Schneider-Stock doi:10.1016/j.mam.2019.04.002 Journal article Molecular Aspects of Medicine Elsevier BV 0098-2997 https://api.elsevier.com/content/article/PII:S0098299719300081?httpAccept=text/xml; https://api.elsevier.com/content/article/PII:S0098299719300081?httpAccept=text/plain</p>
<hr/>	
<p>Title Authors DOI Type Published in</p>	<p>Identification of a Novel Candidate Gene for Serrated Polyposis Syndrome Germline Predisposition by Performing Linkage Analysis Combined With Whole-Exome Sequencing Claudio Toma; Marcos Díaz-Gay; Yasmin Soares de Lima; Coral Arnau-Collell; Sebastià Franch-Expósito; Jenifer Muñoz; Bronwyn Overs; Laia Bonjoch; Sabela Carballal; Teresa Ocaña; Miriam Cuatrecasas; Aránzazu Díaz de Bustamante; Antoni Castells; Luis Bujanda; Joaquín Cubiella; Francesc Balaguer; Daniel Rodríguez-Alcalde; Janice M. Fullerton; Sergi Castellví-Bel doi:10.14309/ctg.000000000000100 Journal article Clinical and Translational Gastroenterology</p>

<p>Published by ISSN Subject Link</p>	<p>Ovid Technologies (Wolters Kluwer Health) 2155-384X Gastroenterology http://journals.lww.com/ctg/Fulltext/10.14309/ctg.000000000000100</p>
<hr/>	
<p>Title Authors DOI Type Published in Published by ISSNs Subjects Link</p>	<p>Evaluation of an aldo-keto reductase gene signature with prognostic significance in colon cancer via activation of epithelial to mesenchymal transition and the p70S6K pathway Seçil Demirkol Canlı; Esin Gülce Seza; Ilir Sheraj; Ismail Gömçeli; Nesrin Turhan; Steven Carberry; Jochen H M Prehn; Ali Osmay Güre; Sreeparna Banerjee doi:10.1093/carcin/bgaa072 Journal article Carcinogenesis Oxford University Press (OUP) 0143-3334; 1460-2180 Cancer Research; General Medicine http://academic.oup.com/carcin/advance-article-pdf/doi/10.1093/carcin/bgaa072/33556883/bgaa072.pdf</p>
<hr/>	
<p>Title Authors DOI Type Published in Published by ISSN Subjects Links</p>	<p>Lifestyle and dietary environmental factors in colorectal cancer susceptibility Neil Murphy; Victor Moreno; David J. Hughes; Ludmila Vodicka; Pavel Vodicka; Elom K. Aglago; Marc J. Gunter; Mazda Jenab doi:10.1016/j.mam.2019.06.005 Journal article Molecular Aspects of Medicine Elsevier BV 0098-2997 Clinical Biochemistry; Molecular Medicine; Biochemistry; Molecular Biology; General Medicine https://api.elsevier.com/content/article/PII:S0098299719300330?httpAccept=text/xml; https://api.elsevier.com/content/article/PII:S0098299719300330?httpAccept=text/plain</p>
<hr/>	
<p>Title Authors DOI Type Published in Published by ISSN</p>	<p>Functional Polymorphisms in DNA Repair Genes Are Associated with Sporadic Colorectal Cancer Susceptibility and Clinical Outcome Katerina Jiraskova; David Hughes; Stefanie Brezina; Tanja Gumpenberger; Veronika Veskrnova; Tomas Buchler; Michaela Schneiderova; Miroslav Levy; Vaclav Liska; Sona Vodenkova; Cornelia Di Gaetano; Alessio Naccarati; Barbara Pardini; Veronika Vymetalkova; Andrea Gsur; Pavel Vodicka doi:10.3390/ijms20010097 Journal article International Journal of Molecular Sciences MDPI AG 1422-0067</p>

Subjects	Physical and Theoretical Chemistry; Inorganic Chemistry; Organic Chemistry; Spectroscopy; Molecular Biology; Catalysis; General Medicine; Computer Science Applications
Link	http://www.mdpi.com/1422-0067/20/1/97/pdf
<hr/>	
Title	Fusobacterium nucleatum tumor DNA levels are associated with survival in colorectal cancer patients
Authors	Andrew T. Kunzmann; Marcela Alcântara Proença; Haydee WT Jordao; Katerina Jiraskova; Michaela Schneiderova; Miroslav Levy; Václav Liska; Tomas Buchler; Ludmila Vodickova; Veronika Vymetalkova; Ana Elizabete Silva; Pavel Vodicka; David J. Hughes
DOI	doi:10.1007/s10096-019-03649-1
Type	Journal article
Published in	European Journal of Clinical Microbiology & Infectious Diseases
Published by	Springer Science and Business Media LLC
ISSNs	0934-9723 ; 1435-4373
Subjects	Microbiology (medical); Infectious Diseases; General Medicine
Links	http://link.springer.com/content/pdf/10.1007/s10096-019-03649-1.pdf ; http://link.springer.com/article/10.1007/s10096-019-03649-1/fulltext.html
<hr/>	
Title	Role of POLE and POLD1 in familial cancer
Authors	Pilar Mur; Sandra García-Mulero; Jesús del Valle; Lorena Magraner-Pardo; August Vidal; Marta Pineda; Giacomo Cinnirella; Edgar Martín-Ramos; Tirso Pons; Adriana López-Doriga; Sami Belhadj; Lidia Feliubadaló; Pau M. Munoz-Torres; Matilde Navarro; Elia Grau; Esther Darder; Gemma Llort; Judit Sanz; Teresa Ramón y Cajal; Judith Balmana; Joan Brunet; Victor Moreno; Josep M. Piulats; Xavier Matías-Guiu; Rebeca Sanz-Pamplona; Rosa Aligué; Gabriel Capellá; Conxi Lázaro; Laura Valle
DOI	doi:10.1038/s41436-020-0922-2
Type	Journal article
Published in	Genetics in Medicine
Published by	Springer Science and Business Media LLC
ISSNs	1098-3600 ; 1530-0366
Subject	Genetics(clinical)
Links	http://www.nature.com/articles/s41436-020-0922-2.pdf ; http://www.nature.com/articles/s41436-020-0922-2
<hr/>	
Title	Reply to: "Development of an MSI-positive colon tumor with aberrant DNA methylation in a PPAP patient"
Authors	Pilar Mur; Claire Palles; Ian Tomlinson ; Laura Valle
DOI	doi:10.1038/s10038-019-0701-6
Type	Journal article
Published in	Journal of Human Genetics
Published by	Springer Science and Business Media LLC

ISSNs	1434-5161 ; 1435-232X
Subjects	Genetics(clinical); Genetics
Links	http://www.nature.com/articles/s10038-019-0701-6.pdf ; http://www.nature.com/articles/s10038-019-0701-6
<hr/>	
Title	Contribution to colonic polyposis of recently proposed predisposing genes and assessment of the prevalence of NTHL1 □ and MSH3 □ associated polyposes
Authors	Mariona Terradas ; Pau M. Munoz□Torres ; Sami Belhadj ; Gemma Aiza; Matilde Navarro; Joan Brunet ; Gabriel Capellá ; Laura Valle
DOI	doi:10.1002/humu.23853
Type	Journal article
Published in	Human Mutation
Published by	Wiley
ISSNs	1059-7794 ; 1098-1004
Subjects	Genetics(clinical); Genetics
Links	https://api.wiley.com/onlinelibrary/tdm/v1/articles/10.1002%2Fhumu.23853 ; https://onlinelibrary.wiley.com/doi/pdf/10.1002/humu.23853 ; https://onlinelibrary.wiley.com/doi/full-xml/10.1002/humu.23853
<hr/>	
Title	NTHL1 biallelic mutations seldom cause colorectal cancer, serrated polyposis or a multi-tumor phenotype, in absence of colorectal adenomas
Authors	Sami Belhadj ; Isabel Quintana; Pilar Mur; Pau M. Munoz-Torres; M. Henar Alonso ; Matilde Navarro; Mariona Terradas ; Virginia Piñol; Joan Brunet ; Victor Moreno ; Conxi Lázaro; Gabriel Capellá; Laura Valle
DOI	doi:10.1038/s41598-019-45281-1
Type	Journal article
Published in	Scientific Reports
Published by	Springer Science and Business Media LLC
ISSN	2045-2322
Subject	Multidisciplinary
Links	http://www.nature.com/articles/s41598-019-45281-1.pdf ; http://www.nature.com/articles/s41598-019-45281-1
<hr/>	
Title	Germline variation in O6-methylguanine-DNA methyltransferase (MGMT) as cause of hereditary colorectal cancer
Authors	Sami Belhadj; Cátia Moutinho; Pilar Mur; Fernando Setien; Pere Llinàs-Arias; Montserrat Pérez-Salvia; Tirso Pons ; Marta Pineda; Joan Brunet; Matilde Navarro; Gabriel Capellá ; Manel Esteller; Laura Valle
DOI	doi:10.1016/j.canlet.2019.01.019
Type	Journal article
Published in	Cancer Letters
Published by	Elsevier BV
ISSN	0304-3835

Subjects
Links

Cancer Research; Oncology

<https://api.elsevier.com/content/article/PII:S030438351930031X?httpAccept=text/xml>;
<https://api.elsevier.com/content/article/PII:S030438351930031X?httpAccept=text/plain>

Title

Genome-wide Modeling of Polygenic Risk Score in Colorectal Cancer Risk

Authors

Minta Thomas; Lori C. Sakoda; Michael Hoffmeister; Elisabeth A. Rosenthal; Jeffrey K. Lee; Franzel J.B. van Duijnhoven; Elizabeth A. Platz; Anna H. Wu; Christopher H. Dampier; Albert de la Chapelle; Alicja Wolk; Amit D. Joshi; Andrea Burnett-Hartman; Andrea Gsur; Annika Lindblom; Antoni Castells; Aung Ko Win; Bahram Namjou; Bethany Van Guelpen; Catherine M. Tangen; Qianchuan He; Christopher I. Li; Clemens Schafmayer; Corinne E. Joshu; Cornelia M. Ulrich; D. Timothy Bishop; Daniel D. Buchanan; Daniel Schaid; David A. Drew; David C. Muller; David Duggan; David R. Crosslin; Demetrius Albanes; Edward L. Giovannucci; Eric Larson; Flora Qu; Frank Mentch; Graham G. Giles; Hakon Hakonarson; Heather Hampel; Ian B. Stanaway; Jane C. Figueiredo; Jeroen R. Huyghe; Jessica Minnier; Jenny Chang-Claude; Jochen Hampe; John B. Harley; Kala Visvanathan; Keith R. Curtis; Kenneth Offit; Li Li; Loic Le Marchand; Ludmila Vodickova; Marc J. Gunter; Mark A. Jenkins; Martha L. Slattery; Mathieu Lemire; Michael O. Woods; Mingyang Song; Neil Murphy; Noralane M. Lindor; Ozan Dikilitas; Paul D.P. Pharoah; Peter T. Campbell; Polly A. Newcomb; Roger L. Milne; Robert J. MacInnis; Sergi Castellví-Bel; Shuji Ogino; Sonja I. Berndt; Stéphane Bézieau; Stephen N. Thibodeau; Steven J. Gallinger; Syed H. Zaidi; Tabitha A. Harrison; Temitope O. Keku; Thomas J. Hudson; Veronika Vymetalkova; Victor Moreno; Vicente Martín; Volker Arndt; Wei-Qi Wei; Wendy Chung; Yu-Ru Su; Richard B. Hayes; Emily White; Pavel Vodicka; Graham Casey; Stephen B. Gruber; Robert E. Schoen; Andrew T. Chan; John D. Potter; Hermann Brenner; Gail P. Jarvik; Douglas A. Corley; Ulrike Peters; Li Hsu

DOI

[doi:10.1016/j.ajhg.2020.07.006](https://doi.org/10.1016/j.ajhg.2020.07.006)

Type

Journal article

Published in

The American Journal of Human Genetics

Published by

Elsevier BV

ISSN

[0002-9297](https://www.elsevier.com/issn/0002-9297)

Subjects

Genetics(clinical); Genetics

Links

<https://api.elsevier.com/content/article/PII:S0002929720302366?httpAccept=text/xml>;
<https://api.elsevier.com/content/article/PII:S0002929720302366?httpAccept=text/plain>

Title

Circulating Levels of Insulin-like Growth Factor 1 and Insulin-like Growth Factor Binding Protein 3 Associate With Risk of Colorectal Cancer Based on Serologic

Authors

and Mendelian Randomization Analyses
Neil Murphy; Robert Carreras-Torres; Mingyang Song;
Andrew T. Chan; Richard M. Martin; Nikos
Papadimitriou; Niki Dimou; Konstantinos K. Tsilidis;
Barbara Banbury; Kathryn E. Bradbury; Jelena
Besevic; Sabina Rinaldi; Elio Riboli; Amanda J. Cross;
Ruth C. Travis; Claudia Agnoli; Demetrius Albanes;
Sonja I. Berndt; Stéphane Bézieau; D. Timothy
Bishop; Hermann Brenner; Daniel D. Buchanan; N.
Charlotte Onland-Moret; Andrea Burnett-Hartman;
Peter T. Campbell; Graham Casey; Sergi Castellví-
Bel; Jenny Chang-Claude; María-Dolores Chirlaque;
Albert de la Chapelle; Dallas English; Jane C.
Figueiredo; Steven J. Gallinger; Graham G. Giles;
Stephen B. Gruber; Andrea Gsur; Jochen Hampe;
Heather Hampel; Tabitha A. Harrison; Michael
Hoffmeister; Li Hsu; Wen-Yi Huang; Jeroen R.
Huyghe; Mark A. Jenkins; Temitope O. Keku; Tilman
Kühn; Sun-Seog Kweon; Loic Le Marchand;
Christopher I. Li; Li Li; Annika Lindblom; Vicente
Martín; Roger L. Milne; Víctor Moreno; Polly A.
Newcomb; Kenneth Offit; Shuji Ogino; Jennifer Ose;
Vittorio Perduca; Amanda I. Phipps; Elizabeth A.
Platz; John D. Potter; Conghui Qu; Gad Rennert; Lori
C. Sakoda; Clemens Schafmayer; Robert E. Schoen;
Martha L. Slattery; Catherine M. Tangen; Cornelia M.
Ulrich; Franzel J.B. van Duijnhoven; Bethany Van
Guelpen; Kala Visvanathan; Pavel Vodicka; Ludmila
Vodickova; Veronika Vymetalkova; Hansong Wang;
Emily White; Alicja Wolk; Michael O. Woods; Anna H.
Wu; Wei Zheng; Ulrike Peters; Marc J. Gunter
[doi:10.1053/j.gastro.2019.12.020](https://doi.org/10.1053/j.gastro.2019.12.020)

DOI

Type

Published in

Published by

ISSN

Subject

Links

Journal article

Gastroenterology

Elsevier BV

[0016-5085](https://www.elsevier.com/issn/0016-5085)

Gastroenterology

<https://api.elsevier.com/content/article/PII:S0016508519419513?httpAccept=text/xml>;

<https://api.elsevier.com/content/article/PII:S0016508519419513?httpAccept=text/plain>

Title

Small Non-Coding RNA Profiling in Plasma
Extracellular Vesicles of Bladder Cancer Patients by
Next-Generation Sequencing: Expression Levels of
miR-126-3p and piR-5936 Increase with Higher
Histologic Grades

Authors

Alexandru A. Sabo; [Giovanni Birolo](#); Alessio
Naccarati; [Mihnea P. Dragomir](#); [Serena Aneli](#);
Alessandra Allione; Marco Oderda; Marco Allasia;
Paolo Gontero; [Carlotta Sacerdote](#); Paolo Vineis;
[Giuseppe Matullo](#); [Barbara Pardini](#)

[doi:10.3390/cancers12061507](https://doi.org/10.3390/cancers12061507)

DOI

Type

Published in

Published by

ISSN

Journal article

Cancers

MDPI AG

[2072-6694](https://www.mdpi.com/issn/2072-6694)

Subjects	Cancer Research; Oncology
Link	https://www.mdpi.com/2072-6694/12/6/1507/pdf
<hr/>	
Title	Germline biallelic MCM8 variants are associated with early-onset Lynch-like syndrome
Authors	Mariano Golubicki ; Laia Bonjoch ; José G. Acuña-Ochoa; Marcos Díaz-Gay ; Jenifer Muñoz; Miriam Cuatrecasas ; Teresa Ocaña; Soledad Iseas; Guillermo Mendez; Daniel Cisterna ; Stephanie A. Schubert ; Maartje Nielsen ; Tom van Wezel ; Yael Goldberg ; Eli Pikarsky ; Juan Robbio ; Enrique Roca; Antoni Castells ; Francesc Balaguer; Marina Antelo; Sergi Castellví-Bel
DOI	doi:10.1172/jci.insight.140698
Type	Journal article
Published in	JCI Insight
Published by	American Society for Clinical Investigation
ISSN	2379-3708
Link	http://insight.jci.org/articles/view/140698/files/pdf
<hr/>	
Title	Using fecal immunochemical tubes for the analysis of the gut microbiome has the potential to improve colorectal cancer screening
Authors	Kertu Liis Krigul; Oliver Aasmets; Kreete Lüll; Tõnis Org; Elin Org
DOI	doi:10.1038/s41598-021-99046-w
Type	Journal article
Published in	Scientific Reports
Published by	Springer Science and Business Media LLC
ISSN	2045-2322
Subject	Multidisciplinary
Links	https://www.nature.com/articles/s41598-021-99046-w.pdf ; https://www.nature.com/articles/s41598-021-99046-w
<hr/>	
Title	Untargeted Metabolomics Reveals Major Differences in the Plasma Metabolome between Colorectal Cancer and Colorectal Adenomas
Authors	Tanja Gumpenberger ; Stefanie Brezina ; Pekka Keski-Rahkonen; Andreas Baierl ; Nivonirina Robinot; Gernot Leeb; Nina Habermann; Dieuwertje Kok ; Augustin Scalbert ; Per-Magne Ueland; Cornelia Ulrich ; Andrea Gsur
DOI	doi:10.3390/metabo11020119
Type	Journal article
Published in	Metabolites
Published by	MDPI AG
ISSN	2218-1989
Subjects	Molecular Biology; Biochemistry; Endocrinology, Diabetes and Metabolism
Link	https://www.mdpi.com/2218-1989/11/2/119/pdf
<hr/>	
Title	The role of haematological parameters in predicting

the response to radical chemoradiotherapy in patients with anal squamous cell cancer

Authors: Suzana Stojanovic-Rundic; Mladen Marinkovic; Milena Cavic; Vesna Plesinac Karapandzic; Dusica Gavrilovic; Radmila Jankovic; Richarda M. de Voer; Sergi Castellvi-Bel; Zoran Krivokapic

DOI: [10.2478/raon-2021-0039](https://doi.org/10.2478/raon-2021-0039)

Type: Journal article

Published in: Radiology and Oncology

Published by: Walter de Gruyter GmbH

ISSN: [1581-3207](https://www.isn-international.org/issn/1581-3207)

Subjects: Radiology, Nuclear Medicine and imaging; Oncology

Link: <https://www.sciendo.com/pdf/10.2478/raon-2021-0039>

Title: The Role of Gut Barrier Dysfunction and Microbiome Dysbiosis in Colorectal Cancer Development

Authors: Flavia Genua; Vedhika Raghunathan; Mazda Jenab; William M. Gallagher; David J. Hughes

DOI: [10.3389/fonc.2021.626349](https://doi.org/10.3389/fonc.2021.626349)

Type: Journal article

Published in: Frontiers in Oncology

Published by: Frontiers Media SA

ISSN: [2234-943X](https://www.isn-international.org/issn/2234-943X)

Subjects: Cancer Research; Oncology

Link: <https://www.frontiersin.org/articles/10.3389/fonc.2021.626349/full>

Title: The Inherited and Familial Component of Early-Onset Colorectal Cancer

Authors: [Maria Daca Alvarez](#); [Isabel Quintana](#); [Mariona Terradas](#); [Pilar Mur](#); [Francesc Balaguer](#); [Laura Valle](#)

DOI: [10.3390/cells10030710](https://doi.org/10.3390/cells10030710)

Type: Journal article

Published in: Cells

Published by: MDPI AG

ISSN: [2073-4409](https://www.isn-international.org/issn/2073-4409)

Subject: General Medicine

Link: <https://www.mdpi.com/2073-4409/10/3/710/pdf>

Title: TCox: Correlation-Based Regularization Applied to Colorectal Cancer Survival Data

Authors: [Carolina Peixoto](#); Marta B. Lopes; [Marta Martins](#); Luís Costa; [Susana Vinga](#)

DOI: [10.3390/biomedicines8110488](https://doi.org/10.3390/biomedicines8110488)

Type: Journal article

Published in: Biomedicines

Published by: MDPI AG

ISSN: [2227-9059](https://www.isn-international.org/issn/2227-9059)

Subjects: General Biochemistry, Genetics and Molecular Biology; Medicine (miscellaneous)

Link: <https://www.mdpi.com/2227-9059/8/11/488/pdf>

Title: Stool microRNA profiles reflect different dietary and

Authors	gut microbiome patterns in healthy individuals Sonia Tarallo ; Giulio Ferrero ; Francesca De Filippis; Antonio Francavilla; Edoardo Pasolli; Valentina Panero; Francesca Cordero ; Nicola Segata ; Sara Grioni; Ruggero Gaetano Pensa; Barbara Pardini ; Danilo Ercolini ; Alessio Naccarati
DOI	doi:10.1136/gutjnl-2021-325168
Type	Journal article
Published in	Gut
Published by	BMJ
ISSNs	0017-5749 ; 1468-3288
Subject	Gastroenterology
Link	https://syndication.highwire.org/content/doi/10.1136/gutjnl-2021-325168
<hr/>	
Title	Salicylic Acid and Risk of Colorectal Cancer: A Two-Sample Mendelian Randomization Study
Authors	Aayah Nounu; Rebecca Richmond; Isobel Stewart; Praveen Surendran; Nicholas Wareham; Adam Butterworth; Stephanie Weinstein ; Demetrius Albanes; John Baron; John Hopper; Jane Figueiredo ; Polly Newcomb; Noralane Lindor; Graham Casey; Elizabeth Platz; Loïc Marchand ; Cornelia Ulrich ; Christopher Li; Fränzel van Duijnhoven; Andrea Gsur ; Peter Campbell; Victor Moreno ; Pavel Vodicka; Ludmila Vodickova; Efrat Amitay; Elizabeth Alwers; Jenny Chang-Claude; Lori Sakoda ; Martha Slattery; Robert Schoen; Marc Gunter; Sergi Castellvi-Bel ; Hyeong-Rok Kim; Sun-Seog Kweon; Andrew Chan; Li Li; Wei Zheng; D. Bishop; Daniel Buchanan ; Graham Giles; Stephen Gruber; Gad Rennert; Zsofia Stadler; Tabitha Harrison; Yi Lin; Temitope Keku; Michael Woods; Clemens Schafmayer; Bethany Van Guelpen; Steven Gallinger; Heather Hampel; Sonja Berndt; Paul Pharoah; Annika Lindblom; Alicja Wolk; Anna Wu; Emily White; Ulrike Peters; David Drew; Dominique Scherer; Justo Bermejo ; Hermann Brenner; Michael Hoffmeister ; Ann Williams; Caroline Relton
DOI	doi:10.3390/nu13114164
Type	Journal article
Published in	Nutrients
Published by	MDPI AG
ISSN	2072-6643
Subjects	Food Science; Nutrition and Dietetics
Link	https://www.mdpi.com/2072-6643/13/11/4164/pdf
<hr/>	
Title	Prognostic Factors for Post-Recurrence Survival in Stage II and III Colorectal Carcinoma Patients
Authors	Neda Nikolic ; Davorin Radosavljevic; Dusica Gavrilovic; Vladimir Nikolic; Nemanja Stanic ; Jelena Spasic; Tamara Cacev; Sergi Castellvi-Bel ; Milena Cavic ; Goran Jankovic
DOI	doi:10.3390/medicina57101108
Type	Journal article
Published in	Medicina

Published by MDPI AG
 ISSN [1648-9144](https://doi.org/10.3390/1648-9144)
 Subject General Medicine
 Link <https://www.mdpi.com/1648-9144/57/10/1108/pdf>

Title Prediagnostic Blood Selenium Status and Mortality among Patients with Colorectal Cancer in Western European Populations

Authors Jacqueline Roshelli Baker; Sushma Umesh; [Mazda Jenab](#); [Lutz Schomburg](#); [Anne Tjønneland](#); [Anja Olsen](#); Marie-Christine Boutron-Ruault; Joseph A. Rothwell; Gianluca Severi; Verena Katzke; [Theron Johnson](#); [Matthias B. Schulze](#); [Giovanna Masala](#); Claudia Agnoli; [Vittorio Simeon](#); Rosario Tumino; H. Bas Bueno-de-Mesquita; Inger Torhild Gram; [Guri Skeie](#); Catalina Bonet; [Miguel Rodriguez-Barranco](#); [José María Houerta](#); Björn Gylling; Bethany Van Guelpen; Aurora Perez-Cornago; Elom Aglago; [Heinz Freisling](#); Elisabete Weiderpass; [Amanda J. Cross](#); [Alicia K. Heath](#); [David J. Hughes](#); Veronika Fedirko
[doi:10.3390/biomedicines9111521](https://doi.org/10.3390/biomedicines9111521)

DOI
 Type Journal article
 Published in Biomedicines
 Published by MDPI AG
 ISSN [2227-9059](https://doi.org/10.3390/2227-9059)
 Subjects General Biochemistry, Genetics and Molecular Biology; Medicine (miscellaneous)
 Link <https://www.mdpi.com/2227-9059/9/11/1521/pdf>

Title Polymorphisms within Autophagy-Related Genes Influence the Risk of Developing Colorectal Cancer: A Meta-Analysis of Four Large Cohorts

Authors [Juan Sainz](#); Francisco José García-Verdejo; [Manuel Martínez-Bueno](#); [Abhishek Kumar](#); José Manuel Sánchez-Maldonado; [Anna Díez-Villanueva](#); Ludmila Vodičková; [Veronika Vymetálková](#); [Vicente Martín Sánchez](#); Miguel Inacio Da Silva Filho; Belém Sampaio-Marques; Stefanie Brezina; Katja Butterbach; Rob ter Horst; Michael Hoffmeister; [Paula Ludovico](#); Manuel Jurado; [Yang Li](#); Pedro Sánchez-Rovira; Mihai G. Netea; [Andrea Gsur](#); Pavel Vodička; Víctor Moreno; Kari Hemminki; [Hermann Brenner](#); Jenny Chang-Claude; [Asta Försti](#)
[doi:10.3390/cancers13061258](https://doi.org/10.3390/cancers13061258)

DOI
 Type Journal article
 Published in Cancers
 Published by MDPI AG
 ISSN [2072-6694](https://doi.org/10.3390/2072-6694)
 Subjects Cancer Research; Oncology
 Link <https://www.mdpi.com/2072-6694/13/6/1258/pdf>

Title Non-Lynch Familial and Early-Onset Colorectal Cancer Explained by Accumulation of Low-Risk Genetic Variants

Authors [Pilar Mur](#); Nuria Bonifaci; Anna Díez-Villanueva; Elisabet Munté; [Maria Henar Alonso](#); Mireia Obón-Santacana; Gemma Aiza; Matilde Navarro; [Virginia Piñol](#); [Joan Brunet](#); Ian Tomlinson; Gabriel Capellá; [Victor Moreno](#); [Laura Valle](#)
DOI [doi:10.3390/cancers13153857](https://doi.org/10.3390/cancers13153857)
Type Journal article
Published in Cancers
Published by MDPI AG
ISSN [2072-6694](#)
Subjects Cancer Research; Oncology
Link <https://www.mdpi.com/2072-6694/13/15/3857/pdf>

Title Mutational landscape of plasma cell-free DNA identifies molecular features associated with therapeutic response in patients with colon cancer. A pilot study
Authors [Klara Cervena](#); Barbara Pardini; Marketa Urbanova; Sona Vodenkova; Pazourkova Eva; Veronika Veskrnova; Miroslav Levy; Tomas Buchler; Martin Mokrejs; [Alessio Naccarati](#); Pavel Vodicka; [Veronika Vymetalkova](#)
DOI [doi:10.1093/mutage/geab024](https://doi.org/10.1093/mutage/geab024)
Type Journal article
Published in Mutagenesis
Published by Oxford University Press (OUP)
ISSNs [0267-8357](#); [1464-3804](#)
Subjects Health, Toxicology and Mutagenesis; Genetics (clinical); Toxicology; Genetics
Links <http://academic.oup.com/mutage/advance-article-pdf/doi/10.1093/mutage/geab024/38853385/geab024.pdf>; <http://academic.oup.com/mutage/article-pdf/36/5/358/40512881/geab024.pdf>

Title Monoallelic NTHL1 Loss-of-Function Variants and Risk of Polyposis and Colorectal Cancer
Authors Fadwa A. Elsayed; Judith E. Grolleman; Abiramy Ragunathan; Daniel D. Buchanan; Tom van Wezel; Richarda M. de Voer; Arnoud Boot; Marija Staninova Stojovska; Khalid Mahmood; Mark Clendenning; Noel de Miranda; Dagmara Dymerska; Demi van Egmond; Steven Gallinger; Peter Georgeson; Noline Hoogerbrugge; John L. Hopper; Erik A.M. Jansen; Mark A. Jenkins; Jihoon E. Joo; Roland P. Kuiper; Marjolijn J.L. Ligtenberg; Jan Lubinski; Finlay A. Macrae; Hans Morreau; Polly Newcomb; Maartje Nielsen; Claire Palles; Daniel J. Park; Bernard J. Pope; Christophe Rosty; Clara Ruiz Ponte; Hans K. Schackert; Rolf H. Sijmons; Ian P. Tomlinson; Carli M.J. Tops; Lilian Vreede; Romy Walker; Aung K. Win
DOI [doi:10.1053/j.gastro.2020.08.042](https://doi.org/10.1053/j.gastro.2020.08.042)
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Subjects Gastroenterology; Hepatology

Links	https://api.elsevier.com/content/article/PII:S0016508520351131?httpAccept=text/xml ; https://api.elsevier.com/content/article/PII:S0016508520351131?httpAccept=text/plain
<hr/>	
Title	Molecular pathways in post-colonoscopy versus detected colorectal cancers: results from a nested case-control study
Authors	Roel M. M. Bogie; Chantal M. C. le Clercq; Quirinus J. M. Voorham; Martijn Cordes; Daoud Sie; Christian Rausch; Evert van den Broek; Sara D. J. de Vries; Nicole C. T. van Grieken ; Robert G. Riedl; Prapto Sastrowijoto; Ernst-Jan Speel; Rein Vos; Bjorn Winkens; Manon van Engeland; Bauke Ylstra; Gerrit A. Meijer; Ad A. M. Masclee ; Beatriz Carvalho
DOI	doi:10.1038/s41416-021-01619-z
Type	Journal article
Published in	British Journal of Cancer
Published by	Springer Science and Business Media LLC
ISSNs	0007-0920 ; 1532-1827
Subjects	Cancer Research; Oncology
Links	https://www.nature.com/articles/s41416-021-01619-z.pdf ; https://www.nature.com/articles/s41416-021-01619-z
<hr/>	
Title	MCM9 is associated with germline predisposition to early-onset cancer—clinical evidence
Authors	Yael Goldberg ; Ola Aleme; Lilach Peled-Perets; Sergi Castellvi-Bel; Maartje Nielsen; Stavit A. Shalev
DOI	doi:10.1038/s41525-021-00242-4
Type	Journal article
Published in	npj Genomic Medicine
Published by	Springer Science and Business Media LLC
ISSN	2056-7944
Subjects	Genetics (clinical); Genetics; Molecular Biology
Links	https://www.nature.com/articles/s41525-021-00242-4.pdf ; https://www.nature.com/articles/s41525-021-00242-4
<hr/>	
Title	Germline and Somatic Whole-Exome Sequencing Identifies New Candidate Genes Involved in Familial Predisposition to Serrated Polyposis Syndrome
Authors	Yasmin Soares de Lima; Coral Arnau-Collell; Marcos Díaz-Gay ; Laia Bonjoch ; Sebastià Franch-Expósito; Jenifer Muñoz; Leticia Moreira ; Teresa Ocaña; Miriam Cuatrecasas ; Cristina Herrera-Pariente ; Sabela Carballal ; Lorena Moreno; Aránzazu Díaz de Bustamante; Antoni Castells ; Luis Bujanda; Joaquín Cubiella ; Daniel Rodríguez-Alcalde ; Francesc Balaguer ; Sergi Castellví-Bel
DOI	doi:10.3390/cancers13040929
Type	Journal article
Published in	Cancers
Published by	MDPI AG

ISSN Subjects Link	2072-6694 Cancer Research; Oncology https://www.mdpi.com/2072-6694/13/4/929/pdf
<hr/>	
Title	Genetic variations in microRNA-binding sites of solute carrier transporter genes as predictors of clinical outcome in colorectal cancer
Authors	Petra Bendova; Barbara Pardini; Simona Susova; Jachym Rosendorf; Miloslav Levy; Pavel Skrobanek; Tomas Buchler; Jan Kral; Vaclav Liska; Ludmila Vodickova; Stefano Landi; Pavel Soucek; Alessio Naccarati ; Pavel Vodicka; Veronika Vymetalkova
DOI	doi:10.1093/carcin/bgaa136
Type	Journal article
Published in	Carcinogenesis
Published by	Oxford University Press (OUP)
ISSNs	0143-3334 ; 1460-2180
Subjects	Cancer Research; General Medicine
Links	http://academic.oup.com/carcin/advance-article-pdf/doi/10.1093/carcin/bgaa136/36577760/bgaa136.pdf ; http://academic.oup.com/carcin/article-pdf/42/3/378/37119123/bgaa136.pdf
<hr/>	
Title	Genetic architectures of proximal and distal colorectal cancer are partly distinct
Authors	Jeroen R Huyghe ; Tabitha A Harrison; Stephanie A Bien; Heather Hampel; Jane C Figueiredo; Stephanie L Schmit; David V Conti; Sai Chen; Conghui Qu; Yi Lin; Richard Barfield; John A Baron; Amanda J Cross; Brenda Diergaarde; David Duggan; Sophia Harlid; Liher Imaz; Hyun Min Kang; David M Levine; Vittorio Perduca; Aurora Perez-Cornago; Lori C Sakoda; Fredrick R Schumacher; Martha L Slattery; Amanda E Toland; Fränzel J B van Duijnhoven; Bethany Van Guelpen; Antonio Agudo; Demetrius Albanes; M Henar Alonso; Kristin Anderson; Coral Arnau-Collell; Volker Arndt; Barbara L Banbury; Michael C Bassik; Sonja I Berndt; Stéphane Béziau; D Timothy Bishop; Juergen Boehm; Heiner Boeing; Marie-Christine Boutron-Ruault; Hermann Brenner ; Stefanie Brezina; Stephan Buch; Daniel D Buchanan ; Andrea Burnett-Hartman; Bette J Caan; Peter T Campbell; Prudence R Carr; Antoni Castells; Sergi Castellví-Bel; Andrew T Chan ; Jenny Chang-Claude; Stephen J Chanock; Keith R Curtis; Albert de la Chapelle; Douglas F Easton; Dallas R English; Edith J M Feskens; Manish Gala; Steven J Gallinger; W James Gauderman; Graham G Giles; Phyllis J Goodman; William M Grady; John S Grove; Andrea Gsur ; Marc J Gunter; Robert W Haile; Jochen Hampe ; Michael Hoffmeister ; John L Hopper; Wan-Ling Hsu; Wen-Yi Huang ; Thomas J Hudson; Mazda Jenab ; Mark A Jenkins; Amit D Joshi; Temitope O Keku; Charles Kooperberg; Tilman Kühn; Sébastien Küry; Loic Le Marchand; Flavio Lejbkovicz; Christopher I Li; Li Li; Wolfgang Lieb; Annika Lindblom; Noralane M Lindor; Satu

Männistö; Sanford D Markowitz; Roger L Milne; Lorena Moreno; [Neil Murphy](#); Rami Nassir; Kenneth Offit; Shuji Ogino; Salvatore Panico; Patrick S Parfrey; Rachel Pearlman; Paul D P Pharoah; Amanda I Phipps; Elizabeth A Platz; John D Potter; Ross L Prentice; Lihong Qi; Leon Raskin; Gad Rennert; Hedy S Rennert; Elio Riboli; Clemens Schafmayer; Robert E Schoen; Daniela Seminara; Mingyang Song; Yu-Ru Su; Catherine M Tangen; Stephen N Thibodeau; Duncan C Thomas; Antonia Trichopoulou; Cornelia M Ulrich; Kala Visvanathan; Pavel Vodicka; Ludmila Vodickova; Veronika Vymetalkova; Korbinian Weigl; Stephanie J Weinstein; Emily White; Alicja Wolk; Michael O Woods; Anna H Wu; Goncalo R Abecasis; Deborah A Nickerson; Peter C Scacheri; Anshul Kundaje; Graham Casey; Stephen B Gruber; Li Hsu; Victor Moreno; Richard B Hayes; Polly A Newcomb; [Ulrike Peters](#)
[doi:10.1136/gutjnl-2020-321534](https://doi.org/10.1136/gutjnl-2020-321534)
 Journal article
 Gut
 BMJ
[0017-5749](#); [1468-3288](#)
 Gastroenterology
<https://syndication.highwire.org/content/doi/10.1136/gutjnl-2020-321534>

Title Faecal miRNA profiles associated with age, sex, BMI, and lifestyle habits in healthy individuals
 Authors Antonio Francavilla; Amedeo Gagliardi; Giulia Piaggieschi; Sonia Tarallo; Francesca Cordero; Ruggero G. Pensa; Alessia Impeduglia; Gian Paolo Caviglia; Davide Giuseppe Ribaldone; Gaetano Gallo; Sara Gioni; Giulio Ferrero; Barbara Pardini; Alessio Naccarati
 DOI [doi:10.1038/s41598-021-00014-1](https://doi.org/10.1038/s41598-021-00014-1)
 Type Journal article
 Published in Scientific Reports
 Published by Springer Science and Business Media LLC
 ISSN [2045-2322](#)
 Subject Multidisciplinary
 Links <https://www.nature.com/articles/s41598-021-00014-1.pdf>;
<https://www.nature.com/articles/s41598-021-00014-1>

Title Exome sequencing of early-onset patients supports genetic heterogeneity in colorectal cancer
 Authors C. Fernández-Rozadilla; M. Álvarez-Barona; I. Quintana; A. López-Novo; J. Amigo; J. M. Cameselle-Teijeiro; E. Roman; D. Gonzalez; X. Llor; L. Bujanda; X. Bessa; R. Jover; F. Balaguer; A. Castells; S. Castellví-Bel; G. Capellá; A. Carracedo; L. Valle; Clara Ruiz-Ponte
 DOI [doi:10.1038/s41598-021-90590-z](https://doi.org/10.1038/s41598-021-90590-z)
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 Published in Scientific Reports

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[2045-2322](https://doi.org/10.1007/978-1-4939-9736-7_2045-2322)
Multidisciplinary
<http://www.nature.com/articles/s41598-021-90590-z.pdf>;
<http://www.nature.com/articles/s41598-021-90590-z>

Title

Cross-Talk Between Tumor Cells Undergoing Epithelial to Mesenchymal Transition and Natural Killer Cells in Tumor Microenvironment in Colorectal Cancer

Authors

Ana Vuletić; Katarina Mirjačić Martinović; Nevena Tišma Miletić; Jerome Zoidakis; Sergi Castellvi-Bel; Milena Čavić

DOI

[doi:10.3389/fcell.2021.750022](https://doi.org/10.3389/fcell.2021.750022)

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Subjects

Cell Biology; Developmental Biology

Link

<https://www.frontiersin.org/articles/10.3389/fcell.2021.750022/full>

Title

Comprehensive Volatilome and Metabolome Signatures of Colorectal Cancer in Urine: A Systematic Review and Meta-Analysis

Authors

[Celia Mallafré-Muro](#); [Maria Llambrich](#); [Raquel Cumeras](#); [Antonio Pardo](#); [Jesús Brezmes](#); [Santiago Marco](#); [Josep Gumà](#)

DOI

[doi:10.3390/cancers13112534](https://doi.org/10.3390/cancers13112534)

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Subjects

Cancer Research; Oncology

Link

<https://www.mdpi.com/2072-6694/13/11/2534/pdf>

Title

Comprehensive Genomic Characterization of Fifteen Early-Onset Lynch-Like Syndrome Colorectal Cancers

Authors

[Mariano Golubicki](#); [Marcos Díaz-Gay](#); [Laia Bonjoch](#); [Sebastià Franch-Expósito](#); [Jenifer Muñoz](#); [Miriam Cuatrecasas](#); [Teresa Ocaña](#); [Soledad Iseas](#); [Guillermo Mendez](#); [Marcela Carballido](#); [Juan Robbio](#); [Daniel Cisterna](#); [Enrique Roca](#); [Antoni Castells](#); [Francesc Balaguer](#); [Sergi Castellví-Bel](#); [Marina Antelo](#)
[doi:10.3390/cancers13061259](https://doi.org/10.3390/cancers13061259)

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Subjects

Cancer Research; Oncology

Link

<https://www.mdpi.com/2072-6694/13/6/1259/pdf>

Title Colorectal Cancer Study of Austria (CORSA): A Population-Based Multicenter Study
 Authors [Andrea Gsur](#); [Andreas Baierl](#); [Stefanie Brezina](#)
 DOI [doi:10.3390/biology10080722](https://doi.org/10.3390/biology10080722)
 Type Journal article
 Published in Biology
 Published by MDPI AG
 ISSN [2079-7737](#)
 Subjects General Agricultural and Biological Sciences; General Immunology and Microbiology; General Biochemistry, Genetics and Molecular Biology
 Link <https://www.mdpi.com/2079-7737/10/8/722/pdf>

Title ATF2 loss promotes tumor invasion in colorectal cancer cells via upregulation of cancer driver TROP2
 Authors Kerstin Huebner; Katharina Erlenbach-Wuensch; Jan Prochazka; Ilir Sheraj; Chuanpit Hampel; Blanka Mrazkova; Tereza Michalcikova; Jolana Tureckova; Veronika Iatsiuk; Anne Weissmann; Fulvia Ferrazzi; Philipp Kunze; Enise Nalli; Elisabeth Sammer; Annemarie Gehring; Marie M. Cheema; Markus Eckstein; Eva-Maria Paap; Agnes Soederberg; Corinna Fischer; Sushmita Paul; Vijayalakshmi Mahadevan; Benardina Ndreshkjana; Melanie A. Meier; Susanne Muehlich; Carol I. Geppert; Susanne Merkel; Robert Grutzmann; Adriana Roehe; Sreeparna Banerjee; Arndt Hartmann; Radislav Sedlacek; [Regine Schneider-Stock](#)
 DOI [doi:10.1007/s00018-022-04445-5](https://doi.org/10.1007/s00018-022-04445-5)
 Type Journal article
 Published in Cellular and Molecular Life Sciences
 Published by Springer Science and Business Media LLC
 ISSNs [1420-682X](#); [1420-9071](#)
 Subjects Cell Biology; Cellular and Molecular Neuroscience; Pharmacology; Molecular Biology; Molecular Medicine
 Links <https://link.springer.com/content/pdf/10.1007/s00018-022-04445-5.pdf>;
<https://link.springer.com/article/10.1007/s00018-022-04445-5/fulltext.html>

Title Association of Pre-diagnostic Antibody Responses to Escherichia coli and Bacteroides fragilis Toxin Proteins with Colorectal Cancer in a European Cohort
 Authors Julia Butt; [Mazda Jenab](#); Jill Werner; Veronika Fedirko; Elisabete Weiderpass; Christina C. Dahm; Anne Tjønneland; Anja Olsen; Marie-Christine Boutron-Ruault; Joseph A. Rothwell; [Gianluca Severi](#); Rudolf Kaaks; Renée Turzanski-Fortner; Krasimira Aleksandrova; Matthias Schulze; Domenico Palli; Valeria Pala; Salvatore Panico; Rosario Tumino; Carlotta Sacerdote; Bas Bueno-de-Mesquita; [Carla H. Van Gils](#); Inger Torhild Gram; Marko Lukic; Núria Sala; María José Sánchez Pérez; Eva Ardanaz; María-Dolores Chirlaque; Richard Palmquist; Thyra Löwenmark; Ruth C Travis; Alicia Heath; Amanda J Cross; Heinz Freisling; Semi Zouiouich; Elom Aglago;

DOI	Tim Waterboer; David J. Hughes
Type	doi:10.1080/19490976.2021.1903825
Published in	Journal article
Published by	Gut Microbes
ISSNs	Informa UK Limited
Subjects	1949-0976 ; 1949-0984
Link	Infectious Diseases; Microbiology (medical); Gastroenterology; Microbiology https://www.tandfonline.com/doi/pdf/10.1080/19490976.2021.1903825
<hr/>	
Title	Association of circulating short chain fatty acid levels with colorectal adenomas and colorectal cancer
Authors	Flavia Genua ; Bojana Mirković ; Amy Mullee; Miroslav Levy; William M. Gallagher; Pavel Vodicka ; David J. Hughes
DOI	doi:10.1016/j.clnesp.2021.09.740
Type	Journal article
Published in	Clinical Nutrition ESPEN
Published by	Elsevier BV
ISSN	2405-4577
Subjects	Nutrition and Dietetics; Endocrinology, Diabetes and Metabolism
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<hr/>	
Title	Analysis of MicroRNA Expression Changes During the Course of Therapy In Rectal Cancer Patients
Authors	Klara Cervena; Vendula Novosadova; Barbara Pardini; Alessio Naccarati; Alena Opattova; Josef Horak; Sona Vodenkova; Tomas Buchler; Pavel Skrobánek; Miroslav Levy; Pavel Vodicka; Veronika Vymetalkova
DOI	doi:10.3389/fonc.2021.702258
Type	Journal article
Published in	Frontiers in Oncology
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ISSN	2234-943X
Subjects	Cancer Research; Oncology
Link	https://www.frontiersin.org/articles/10.3389/fonc.2021.702258/full
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Title	Amanida: an R package for meta-analysis of metabolomics non-integral data
Authors	Maria Llambrich; Eudald Correig; Josep Gumà; Jesús Brezmes; Raquel Cumeras
DOI	doi:10.1093/bioinformatics/btab591
Type	Journal article
Published in	Bioinformatics
Published by	Oxford University Press (OUP)
ISSNs	1367-4803 ; 1460-2059
Subjects	Computational Mathematics; Computational Theory

and Mathematics; Computer Science Applications; Molecular Biology; Biochemistry; Statistics and Probability

Links

<http://academic.oup.com/bioinformatics/advance-article-pdf/doi/10.1093/bioinformatics/btab591/40394829/btab591.pdf>;
<https://academic.oup.com/bioinformatics/article-pdf/38/2/583/42039596/btab591.pdf>

Title

Adiposity, metabolites, and colorectal cancer risk: Mendelian randomization study

Authors

[Caroline J. Bull](#); Joshua A. Bell; Neil Murphy; Eleanor Sanderson; George Davey Smith; Nicholas J. Timpson; Barbara L. Banbury; Demetrius Albanes; Sonja I. Berndt; Stéphane Bézieau; D. Timothy Bishop; Hermann Brenner; Daniel D. Buchanan; Andrea Burnett-Hartman; Graham Casey; Sergi Castellví-Bel; Andrew T. Chan; Jenny Chang-Claude; Amanda J. Cross; Albert de la Chapelle; Jane C. Figueiredo; Steven J. Gallinger; Susan M. Gapstur; Graham G. Giles; Stephen B. Gruber; Andrea Gsur; Jochen Hampe; Heather Hampel; Tabitha A. Harrison; Michael Hoffmeister; Li Hsu; Wen-Yi Huang; Jeroen R. Huyghe; Mark A. Jenkins; Corinne E. Joshu; Temitope O. Keku; Tilman Kühn; Sun-Seog Kweon; Loic Le Marchand; Christopher I. Li; Li Li; Annika Lindblom; Vicente Martín; Anne M. May; Roger L. Milne; Victor Moreno; Polly A. Newcomb; Kenneth Offit; Shuji Ogino; Amanda I. Phipps; Elizabeth A. Platz; John D. Potter; Conghui Qu; J. Ramón Quirós; Gad Rennert; Elio Riboli; Lori C. Sakoda; Clemens Schafmayer; Robert E. Schoen; Martha L. Slattery; Catherine M. Tangen; Kostas K. Tsilidis; Cornelia M. Ulrich; Fränzel J. B. van Duijnhoven; Bethany van Guelpen; Kala Visvanathan; Pavel Vodicka; Ludmila Vodickova; Hansong Wang; Emily White; Alicja Wolk; Michael O. Woods; Anna H. Wu; Peter T. Campbell; Wei Zheng; Ulrike Peters; Emma E. Vincent; Marc J. Gunter

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<http://link.springer.com/article/10.1186/s12916-020-01855-9/fulltext.html>

Title

A rare large duplication of MLH1 identified in Lynch syndrome

Authors

Abhishek Kumar; Nagarajan Paramasivam; Obul Reddy Bandapalli; Matthias Schlesner; Tianhui Chen; Rolf Sijmons; Dagmara Dymerska; Katarzyna Golebiewska; Magdalena Kuswik; Jan Lubinski; Kari

DOI Type Published in Published by ISSN Subjects Links	<p>Hemminki; Asta Försti doi:10.1186/s13053-021-00167-0 Journal article Hereditary Cancer in Clinical Practice Springer Science and Business Media LLC 1897-4287 Genetics (clinical); Oncology http://link.springer.com/content/pdf/10.1186/s13053-021-00167-0.pdf; http://link.springer.com/article/10.1186/s13053-021-00167-0/fulltext.html</p>
Title Authors DOI Type Published in Published by ISSN Subject Link	<hr/> <p>A Novel Low-Risk Germline Variant in the SH2 Domain of the SRC Gene Affects Multiple Pathways in Familial Colorectal Cancer Diamanto Skopelitou; Beiping Miao; Aayushi Srivastava; Abhishek Kumar; Magdalena Kuświk; Dagmara Dymerska; Nagarajan Paramasivam; Matthias Schlesner; Jan Lubiński; Kari Hemminki; Asta Försti; Obul Reddy Bandapalli doi:10.3390/jpm11040262 Journal article Journal of Personalized Medicine MDPI AG 2075-4426 Medicine (miscellaneous) https://www.mdpi.com/2075-4426/11/4/262/pdf</p>
Title Authors DOI Type	<hr/> <p>A Combined Proteomics and Mendelian Randomization Approach to Investigate the Effects of Aspirin-Targeted Proteins on Colorectal Cancer Aayah Nounu; Alexander Greenhough; Kate J. Heesom; Rebecca C. Richmond; Jie Zheng; Stephanie J. Weinstein; Demetrius Albanes; John A. Baron; John L. Hopper; Jane C. Figueiredo; Polly A. Newcomb; Noralane M. Lindor; Graham Casey; Elizabeth A. Platz; Loïc Le Marchand; Cornelia M. Ulrich; Christopher I. Li; Fränzel J.B. van Duijnhoven; Andrea Gsur; Peter T. Campbell; Victor Moreno; Pavel Vodicka; Ludmila Vodickova; Hermann Brenner; Jenny Chang-Claude; Michael Hoffmeister; Lori C. Sakoda; Martha L. Slattery; Robert E. Schoen; Marc J. Gunter; Sergi Castellví-Bel; Hyeong Rok Kim; Sun-Seog Kweon; Andrew T. Chan; Li Li; Wei Zheng; D. Timothy Bishop; Daniel D. Buchanan; Graham G. Giles; Stephen B. Gruber; Gad Rennert; Zsofia K. Stadler; Tabitha A. Harrison; Yi Lin; Temitope O. Keku; Michael O. Woods; Clemens Schafmayer; Bethany Van Guelpen; Steven Gallinger; Heather Hampel; Sonja I. Berndt; Paul D.P. Pharoah; Annika Lindblom; Alicja Wolk; Anna H. Wu; Emily White; Ulrike Peters; David A. Drew; Dominique Scherer; Justo Lorenzo Bermejo; Ann C. Williams; Caroline L. Relton doi:10.1158/1055-9965.EPI-20-1176 Journal article</p>

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Cancer Epidemiology, Biomarkers & Prevention
American Association for Cancer Research (AACR)
[1055-9965](#); [1538-7755](#)
Oncology; Epidemiology
<https://aacrjournals.org/cebpa/article-pdf/30/3/564/2289443/564.pdf>

Title

Identifying Novel Susceptibility Genes for Colorectal Cancer Risk From a Transcriptome-Wide Association Study of 125,478 Subjects

Authors

[Xingyi Guo](#); Weiqiang Lin; Wanqing Wen; [Jeroen Huyghe](#); Stephanie Bien; Qiuyin Cai; [Tabitha Harrison](#); Zhishan Chen; Conghui Qu; Jiandong Bao; Jirong Long; [Yuan Yuan](#); Fangqin Wang; Mengqiu Bai; Goncalo R. Abecasis; Demetrius Albanes; Sonja I. Berndt; Stéphane Bézieau; [D. Timothy Bishop](#); Hermann Brenner; [Stephan Buch](#); Andrea Burnett-Hartman; Peter T. Campbell; Sergi Castellví-Bel; Andrew T. Chan; Jenny Chang-Claude; Stephen J. Chanock; Sang Hee Cho; David V. Conti; Albert de la Chapelle; Edith J.M. Feskens; Steven J. Gallinger; [Graham G. Giles](#); Phyllis J. Goodman; Andrea Gsur; [Mark Guinter](#); Marc J. Gunter; Jochen Hampe; [Heather Hampel](#); Richard B. Hayes; [Michael Hoffmeister](#); Ellen Kampman; Hyun Min Kang; Temitope O. Keku; Hyeong Rok Kim; Loic Le Marchand; Soo Chin Lee; Christopher I. Li; Li Li; Annika Lindblom; Noralane Lindor; [Roger L. Milne](#); [Victor Moreno](#); Neil Murphy; Polly A. Newcomb; Deborah A. Nickerson; Kenneth Offit; Rachel Pearlman; [Paul D.P. Pharoah](#); Elizabeth A. Platz; [John D. Potter](#); [Gad Rennert](#); Lori C. Sakoda; Clemens Schafmayer; [Stephanie L. Schmit](#); Robert E. Schoen; Fredrick R. Schumacher; Martha L. Slattery; Yu-Ru Su; Catherine M. Tangen; Cornelia M. Ulrich; Franzel J.B. van Duijnhoven; [Bethany Van Guelpen](#); Kala Visvanathan; [Pavel Vodicka](#); Ludmila Vodickova; Veronika Vymetalkova; [Xiaoliang Wang](#); Emily White; [Alicja Wolk](#); Michael O. Woods; Graham Casey; Li Hsu; [Mark A. Jenkins](#); Stephen B. Gruber; Ulrike Peters; Wei Zheng

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Subjects

Gastroenterology; Hepatology

Links

<https://api.elsevier.com/content/article/PII:S0016508520352434?httpAccept=text/xml>;
<https://api.elsevier.com/content/article/PII:S0016508520352434?httpAccept=text/plain>

Title

Hemochromatosis risk genotype is not associated with colorectal cancer or age at its diagnosis

Authors

Gail P. Jarvik; Xiaoliang Wang; Pierre Fontanillas; Esther Kim; Sirisak Chanprasert; Adam S. Gordon;

Lisa Bastarache; Kris V. Kowdley; Tabitha Harrison; Elisabeth A. Rosenthal; Ian B. Stanaway; Stéphane Bézieau; Stephanie J. Weinstein; Polly A. Newcomb; Graham Casey; Elizabeth A. Platz; Kala Visvanathan; Loic Le Marchand; Cornelia M. Ulrich; Sheetal Hardikar; Christopher I. Li; Franzel J.B. van Duijnhoven; Andrea Gsur; Peter T. Campbell; Victor Moreno; Pavel Vodička; Hermann Brenner; Jenny Chang-Claude; Michael Hoffmeister; Martha L. Slattery; Marc J. Gunter; Elom K. Aglago; Sergi Castellví-Bel; Sun-Seog Kweon; Andrew T. Chan; Li Li; Wei Zheng; D. Timothy Bishop; Graham G. Giles; Gad Rennert; Kenneth Offit; Temitope O. Keku; Michael O. Woods; Jochen Hampe; Bethan Van Guelpen; Steven J. Gallinger; Albert de la Chapelle; Heather Hampel; Sonja I. Berndt; Catherine M. Tangen; Annika Lindblom; Alicja Wolk; Andrea Burnett-Hartman; Anna H. Wu; Emily White; Stephen B. Gruber; Mark A. Jenkins; Joanna Mountain; Ulrike Peters; David R. Crosslin

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Journal article

Human Genetics and Genomics Advances

Elsevier BV

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Genetics (clinical); Molecular Medicine

[https://api.elsevier.com/content/article/PII:S26662477](https://api.elsevier.com/content/article/PII:S2666247720300105?httpAccept=text/xml)

[20300105?httpAccept=text/xml;](https://api.elsevier.com/content/article/PII:S2666247720300105?httpAccept=text/xml)

[https://api.elsevier.com/content/article/PII:S26662477](https://api.elsevier.com/content/article/PII:S2666247720300105?httpAccept=text/plain)

[20300105?httpAccept=text/plain](https://api.elsevier.com/content/article/PII:S2666247720300105?httpAccept=text/plain)

Title

Large-scale cross-cancer fine-mapping of the 5p15.33 region reveals multiple independent signals

Authors

Hongjie Chen; Arunabha Majumdar; Lu Wang; Siddhartha Kar; Kevin M. Brown; Helian Feng; Constance Turman; Joe Dennis; Douglas Easton; Kyriaki Michailidou; Jacques Simard; Timothy Bishop; Iona C. Cheng; Jeroen R. Huyghe; Stephanie L. Schmit; Tracy A. O'Mara; Amanda B. Spurdle; Puya Gharahkhani; Johannes Schumacher; Janusz Jankowski; Ines Gockel; Melissa L. Bondy; Richard S. Houlston; Robert B. Jenkins; Beatrice Melin; Corina Lesseur; Andy R. Ness; Brenda Diergaarde; Andrew F. Olshan; Christopher I. Amos; David C. Christiani; Maria T. Landi; James D. McKay; Myriam Brossard; Mark M. Iles; Matthew H. Law; Stuart MacGregor; Jonathan Beesley; Michelle R. Jones; Jonathan Tyrer; Stacey J. Winham; Alison P. Klein; Gloria Petersen; Donghui Li; Brian M. Wolpin; Rosalind A. Eeles; Christopher A. Haiman; Zsofia Kote-Jarai; Fredrick R. Schumacher; Paul Brennan; Stephen J. Chanock; Valerie Gaborieau; Mark P. Purdue; Paul Pharoah; Rayjean J. Hung; Laufey T. Amundadottir; Peter Kraft; Bogdan Pasaniuc; Sara Lindström

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Human Genetics and Genomics Advances

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Genetics (clinical); Molecular Medicine
<https://api.elsevier.com/content/article/PII:S2666247721000221?httpAccept=text/xml>;
<https://api.elsevier.com/content/article/PII:S2666247721000221?httpAccept=text/plain>

Title

Evaluating the Potential of Polygenic Risk Score to Improve Colorectal Cancer Screening

Authors

Coral Arnau-Collell; [Anna Díez-Villanueva](#); [Beatriz Bellosillo](#); [Josep M. Augé](#); [Jenifer Muñoz](#); Elisabet Guinó; [Leticia Moreira](#); Anna Serradesanferm; Àngels Pozo; Isabel Torà-Rocamora; [Laia Bonjoch](#); [Gemma Ibañez-Sanz](#); [Mireia Obon-Santacana](#); Ferran Moratalla-Navarro; Rebeca Sanz-Pamplona; Carmen Márquez Márquez; [Rebeca Rueda Miret](#); Rocío Pérez Berbegal; [Gabriel Piquer Velasco](#); Cristina Hernández Rodríguez; [Jaume Grau](#); [Antoni Castells](#); [Josep M. Borràs](#); [Xavier Bessa](#); [Victor Moreno](#); [Sergi Castellví-Bel](#)

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Journal article

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Cancer Epidemiology, Biomarkers & Prevention

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Subjects

Oncology; Epidemiology

Links

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<https://aacrjournals.org/cebp/article-pdf/doi/10.1158/1055-9965.EPI-22-0042/3161184/epi-22-0042.pdf>;
<https://aacrjournals.org/cebp/article-pdf/31/7/1305/3186303/1305.pdf>

Title

Nonmalignant Features Associated with Inherited Colorectal Cancer Syndromes-Clues for Diagnosis

Authors

Diana Haimov; [Sari Lieberman](#); [Sergi Castellví-Bel](#); [Maartje Nielsen](#); [Yael Goldberg](#)

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Type

Journal article

Published in

Cancers

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MDPI AG

ISSN

[2072-6694](#)

Subjects

Cancer Research; Oncology

Link

<https://www.mdpi.com/2072-6694/14/3/628/pdf>

Title

Whole Exome Sequencing Identifies APCDD1 and HDAC5 Genes as Potentially Cancer Predisposing in Familial Colorectal Cancer

Authors

Diamanto Skopelitou; Beiping Miao; Aayushi Srivastava; [Abhishek Kumar](#); Magdalena Kuświk; [Dagmara Dymerska](#); Nagarajan Paramasivam; [Matthias Schlesner](#); Jan Lubinski; Kari Hemminki; [Asta Försti](#); [Obul Bandapalli](#)

DOI	doi:10.3390/ijms22041837
Type	Journal article
Published in	International Journal of Molecular Sciences
Published by	MDPI AG
ISSN	1422-0067
Subjects	Inorganic Chemistry; Organic Chemistry; Physical and Theoretical Chemistry; Computer Science Applications; Spectroscopy; Molecular Biology; General Medicine; Catalysis
Link	https://www.mdpi.com/1422-0067/22/4/1837/pdf
<hr/>	
Title	Prognostic potential of circulating miR-93-5p in patients with colorectal cancer liver metastases
Authors	Jovana Despotović; Aleksandar Bogdanović; Sandra Dragičević; Danijel Galun; Zoran Krivokapić; Aleksandra Nikolić
DOI	doi:10.4149/neo_2021_210603N749
Type	Journal article
Published in	Neoplasma
Published by	AEPress, s.r.o.
ISSN	1338-4317
Subjects	Cancer Research; Oncology
<hr/>	
Title	Germline MBD4 deficiency causes a multi-tumor predisposition syndrome
Authors	Claire Palles; Hannah D. West; Edward Chew; Sara Galavotti; Christoffer Flensburg; Judith E. Grolleman; Erik A.M. Jansen; Helen Curley; Laura Chegwidan; Edward H. Arbe-Barnes; Nicola Lander; Rebekah Truscott; Judith Pagan; Ashish Bajel; Kitty Sherwood; Lynn Martin; Huw Thomas; Demetra Georgiou; Florentia Fostira; Yael Goldberg; David J. Adams; Simone A.M. van der Biezen; Michael Christie; Mark Clendenning; Laura E. Thomas; Constantinos Deltas; Aleksandar J. Dimovski; Dagmara Dymerska; Jan Lubinski; Khalid Mahmood; Rachel S. van der Post; Mathijs Sanders; Jürgen Weitz; Jenny C. Taylor; Clare Turnbull; Lilian Vreede; Tom van Wezel; Celina Whalley; Claudia Arnedo-Pac; Giulio Caravagna; William Cross; Daniel Chubb; Anna Frangou; Andreas J. Gruber; Ben Kinnersley; Boris Noyvert; David Church; Trevor Graham; Richard Houlston; Nuria Lopez-Bigas; Andrea Sottoriva; David Wedge; Mark A. Jenkins; Roland P. Kuiper; Andrew W. Roberts; Jeremy P. Cheadle; Marjolijn J.L. Ligtenberg; Nicoline Hoogerbrugge; Viktor H. Koelzer; Andres Dacal Rivas; Ingrid M. Winship; Clara Ruiz Ponte; Daniel D. Buchanan; Derek G. Power; Andrew Green; Ian P.M. Tomlinson ; Julian R. Sampson; Ian J. Majewski; Richarda M. de Voer
DOI	doi:10.1016/j.ajhg.2022.03.018
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ISSN	0002-9297
Subjects	Genetics (clinical); Genetics

Links

<https://api.elsevier.com/content/article/PII:S0002929722001148?httpAccept=text/xml>;
<https://api.elsevier.com/content/article/PII:S0002929722001148?httpAccept=text/plain>

Genetically predicted circulating concentrations of micronutrients and risk of colorectal cancer among individuals of European descent: a Mendelian randomization study.

Tsilidis KK, Papadimitriou N, Dimou N, Gill D, Lewis SJ, Martin RM, Murphy N, Markozannes G, Zuber V, Cross AJ, Burrows K, Lopez DS, Key TJ, Travis RC, Perez-Cornago A, Hunter DJ, van Duijnhoven FJB, Albanes D, Arndt V, Berndt SI, Béziau S, Bishop DT, Boehm J, Brenner H, Burnett-Hartman A, Campbell PT, Casey G, Castellví-Bel S, Chan AT, Chang-Claude J, de la Chapelle A, Figueiredo JC, Gallinger SJ, Giles GG, Goodman PJ, Gsur A, Hampe J, Hampel H, Hoffmeister M, Jenkins MA, Keku TO, Kweon SS, Larsson SC, Le Marchand L, Li CI, Li L, Lindblom A, Martín V, Milne RL, Moreno V, Nan H, Nassir R, Newcomb PA, Offit K, Pharoah PDP, Platz EA, Potter JD, Qi L, Rennert G, Sakoda LC, Schafmayer C, Slattery ML, Snetelaar L, Schenk J, Thibodeau SN, Ulrich CM, Van Guelpen B, Harlid S, Visvanathan K, Vodickova L, Wang H, White E, Wolk A, Woods MO, Wu AH, Zheng W, Bueno-de-Mesquita B, Boutron-Ruault MC, Hughes DJ, Jakszyn P, Kühn T, Palli D, Riboli E, Giovannucci EL, Banbury BL, Gruber SB, Peters U, Gunter MJ.

Am J Clin Nutr. 2021 Jun 1;113(6):1490-1502.

doi: 10.1093/ajcn/nqab003.

Multi-omic analysis of 100,204 Europeans and Asians identifies 103 new colorectal cancer risk associations and provides insights into disease etiology.

Ceres Fernandez-Rozadilla, Maria Timofeeva, Zhishan Che, Philip Law, Minta Thoma, Stephanie Schmit, Virginia Díez-Obrero, Li Hsu, Juan Fernandez-Tajes, Claire Palles, Kitty Sherwood, Sarah Briggs, Victoria Svinti, Kevin Donnelly, Susan Farrington, James Blackmur, Peter Vaughan-Shaw, Xiao-ou Shu, Jirong Long, Qiuyin Cai, Xingyi Guo, Yingchang Lu, Peter Broderick, Jeroen Huyghe, Tabitha Harrison, David Conti, Christopher Dampier, Fredrick Schumacher, Marilena Melas, Gad Rennert, Mireia Obón-Santacana, Vicente Martín-Sánchez, Ferran Moratalla-Navarro, Jae Hwan Oh, Jeongseon Kim, Sun Ha Jee, Keum Ji Jung, Sun-Seog Kweon, Min-Ho Shin, Aesun Shin, Yoon-Ok Ahn, Dong-Hyun Kim, Isao Oze, Wanqing Wen, Keitaro Matsuo, Koichi Matsuda, Chizu Tanikawa, Zefang Ren, Yu-Tang Gao, Wei-Hua Jia, John Hopper, Mark Jenkins, Aung Ko Win, Rish Pai, Jane Figueiredo, Robert Haile, Steven Gallinger, Michael Woods, Polly Newcomb, David Duggan, Jeremy Cheadle, Richard Kaplan, Timothy Maughan, Rachel Kerr, David Kerr, Iva Kirac, CORGI study investigators, SCOT trial translational group and investigators, Jan Böhm, Jukka-Pekka Mecklin, Pekka Jousilahti, Paul Knekt, Lauri Aaltonen, Harri Rissanen, Eero Pukkala, Johan Eriksson, Tatiana Cajuso, Ulrika Hänninen, Johanna Kondelin, Kimmo Palin, Tomas Tanskanen, Laura Renkonen-Sinisalo, Brent Zanke, Satu Männistö, Demetrius Albanes, Stephanie Weinstein, Edward Ruiz-Narvaez, Julie Palmer, Daniel Buchanan, Elizabeth Platz, Kala Visvanathan, Cornelia Ulrich, Erin Siegel, Stefanie Brezina, Andrea Gsur, Peter Campbell, Jenny Chang-Claude, Michael Hoffmeister, Hermann Brenner, Martha Slattery, John Potter, Konstantinos Tsilidis, Matthias Schulze, Marc Gunter, Neil Murphy, Antoni Castells, Sergi Castellví-Bel, Leticia Moreira, Volker Arndt, Anna Shcherbina, Mariana Stern, Bens Pardamean, Timothy Bishop, Graham Giles, Melissa Southey, Gregory Idos, Kevin McDonnell, Zomoroda Abu-Ful, Joel Greenson, Katerina Shulman, Flavio Lejbkovicz, Kenneth Offit, Yu-Ru Su, Robert Steinfeld, Temitope Keku, Bethany van Guelpen, Thomas Hudson, Heather Hampel, Rachel Pearlman, Sonja Berndt, Richard Hayes, Marie Elena Martinez, Sushma Thomas, Douglas Corley, Paul Pharoah, Susanna Larsson, Yun Yen, Heinz-Josef Lenz, Emily White, Li Li, Kimberly Doheny, Elizabeth Pugh, Tameka Shelford, Andrew Chan, Marcia Cruz-Correa, Annika Lindblom, David Hunter, Amit Joshi, Clemens Schafmayer, Peter Scacheri, Anshul Kundaje, Deborah Nickerson, Robert Schoen, Jochen Hampe, Zsafia Stadler, Pavel Vodicka, Ludmila Vodickova, Veronika Vymetalkova, Nickolas Papadopoulos, Christopher Edlund, William Gauderman, Duncan Thomas, David Shibata, Amanda Toland, Sanford Markowitz, Andre Kim, Stephen

Chanock, Franzel van Duijnhoven, Edith Feskens, Lori Sakoda, Manuela Gago-Dominguez, Alicja Wolk, Alessio Naccarati, Barbara Pardini, Liesel FitzGerald, Soo Chin Lee, Shuji Ogino, Stephanie Bien, Charles Kooperberg, Christopher Li, Yi Lin, Ross Prentice, Conghui Qu, Stéphane Bézieau, Catherine Tangen, Elaine Mardis, Loic Le Marchand, Anna Wu, Chenxu Qu, Caroline McNeil, Gerhard Coetzee, Caroline Hayward, Ian Deary, Sarah Harris, Evropi Theodoratou, Stuart Reid, Marion Walker, Li Yin Ooi, Victor Moreno, Graham Casey, Stephen Gruber, Ian Tomlinson, Wei Zheng, Malcolm Dunlop, Richard Houlston, Ulrike Peters.

Nature Genetics 2022 (in press)

Title	Potential Involvement of NSD1, KRT24 and ACACA in the Genetic Predisposition to Colorectal Cancer
Authors	Isabel Quintana ; Pilar Mur ; Mariona Terradas ; Sandra García-Mulero ; Gemma Aiza; Matilde Navarro; Virginia Piñol ; Joan Brunet ; Victor Moreno ; Rebeca Sanz-Pamplona ; Gabriel Capellá; Laura Valle
DOI	doi:10.3390/cancers14030699
Type	Journal article
Published in	Cancers
Published by	MDPI AG
ISSN	2072-6694
Subjects	Cancer Research; Oncology
Link	https://www.mdpi.com/2072-6694/14/3/699/pdf

Title	Germline Variants of CYBA and TRPM4 Predispose to Familial Colorectal Cancer
Authors	Lizhen Zhu ; Beiping Miao; Dagmara Dymerska; Magdalena Kuswik; Elena Bueno-Martínez ; Lara Sanoguera-Miralles ; Eladio A. Velasco ; Nagarajan Paramasivam; Matthias Schlesner ; Abhishek Kumar ; Ying Yuan; Jan Lubinski ; Obul Reddy Bandapalli ; Kari Hemminki ; Asta Försti
DOI	doi:10.3390/cancers14030670
Type	Journal article
Published in	Cancers
Published by	MDPI AG
ISSN	2072-6694
Subjects	Cancer Research; Oncology
Link	https://www.mdpi.com/2072-6694/14/3/670/pdf

Title	Whole exome sequencing identifies novel germline variants of SLC15A4 gene as potentially cancer predisposing in familial colorectal cancer
Authors	Diamanto Skopelitou; Aayushi Srivastava; Beiping Miao; Abhishek Kumar; Dagmara Dymerska; Nagarajan Paramasivam; Matthias Schlesner; Jan Lubinski; Kari Hemminki; Asta Försti; Obul Reddy Bandapalli
DOI	doi:10.1007/s00438-022-01896-0
Type	Journal article
Published in	Molecular Genetics and Genomics
Published by	Springer Science and Business Media LLC
ISSNs	1617-4615 ; 1617-4623
Subjects	Genetics; Molecular Biology; General Medicine
Links	https://link.springer.com/content/pdf/10.1007/s00438-

[022-01896-0.pdf](#);
<https://link.springer.com/article/10.1007/s00438-022-01896-0/fulltext.html>

Title	Whole-Exome Sequencing Identifies a Novel Germline Variant in PTK7 Gene in Familial Colorectal Cancer
Authors	Beiping Miao; Diamanto Skopelitou; Aayushi Srivastava; Sara Giangioffe; Dagmara Dymerska; Nagarajan Paramasivam; Abhishek Kumar ; Magdalena Kuświk ; Wojciech Kluźniak; Katarzyna Paszkowska-Szczur; Matthias Schlesner ; Jan Lubinski ; Kari Hemminki ; Asta Försti ; Obul Reddy Bandapalli
DOI	doi:10.3390/ijms23031295
Type	Journal article
Published in	International Journal of Molecular Sciences
Published by	MDPI AG
ISSN	1422-0067
Subjects	Inorganic Chemistry; Organic Chemistry; Physical and Theoretical Chemistry; Computer Science Applications; Spectroscopy; Molecular Biology; General Medicine; Catalysis
Link	https://www.mdpi.com/1422-0067/23/3/1295/pdf

Title	Solving the enigma of POLD1 p.V295M as a potential cause of increased cancer risk
Authors	Pilar Mur; Lorena Magraner-Pardo ; Sandra García-Mulero; Anna Díez-Villanueva ; Jesús del Valle ; Elsa Ezquerro; Conxi Lázaro ; Gabriel Capellá ; Victor Moreno; Rebeca Sanz-Pamplona; Tirso Pons ; Laura Valle
DOI	doi:10.1038/s41431-021-00926-6
Type	Journal article
Published in	European Journal of Human Genetics
Published by	Springer Science and Business Media LLC
ISSNs	1018-4813 ; 1476-5438
Subjects	Genetics (clinical); Genetics
Links	https://www.nature.com/articles/s41431-021-00926-6.pdf ; https://www.nature.com/articles/s41431-021-00926-6

Circulating adipokine concentrations and risk of five obesity-related cancers: a Mendelian randomization study.

Dimou NL, Papadimitriou N, Mariosa D, Johansson M, Brennan P, Peters U, Chanock SJ, Purdue M, Bishop DT, Gago-Dominquez M, Giles GG, Moreno V, Platz EA, Tangen CM, Wolk A, Zheng W, Wu X, Campbell PT, Giovannucci E, Lin Y; CCFR, Endometrial Cancer Association Consortium, Gunter MJ, Murphy N.

Int J Cancer 2021;148(7):1625-1636. doi: 10.1002/ijc.33338.

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Díez-Villanueva A, Sanz-Pamplona R, Carreras-Torres R, Moratalla-Navarro F, Alonso MH, Paré-Brunet L,

Aussó S, Guinó E, Solé X, Cordero D, Salazar R, Berdasco M, Peinado MA, Moreno V.

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Cancers (Basel) 2022;14(17):4214. doi: 10.3390/cancers14174214.

Title	Discovery and Validation of Clinically Relevant Long Non-Coding RNAs in Colorectal Cancer
Authors	Madison Snyder; Susana Iraola-Guzmán; Ester Saus; Toni Gabaldón
DOI	doi:10.3390/cancers14163866
Type	Journal article
Published in	Cancers
Published by	MDPI AG
ISSN	2072-6694
Subjects	Cancer Research; Oncology
Link	https://www.mdpi.com/2072-6694/14/16/3866/pdf

Title	Target Enrichment Enables the Discovery of lncRNAs with Somatic Mutations or Altered Expression in Paraffin-Embedded Colorectal Cancer Samples
Authors	Susana Iraola-Guzmán; Anna Brunet-Vega; Cinta Pegueroles ; Ester Saus; Hrant Hovhannisyan ; Alex Casalots; Carles Pericay; Toni Gabaldón
DOI	doi:10.3390/cancers12102844
Type	Journal article
Published in	Cancers
Published by	MDPI AG
ISSN	2072-6694
Subjects	Cancer Research; Oncology
Link	https://www.mdpi.com/2072-6694/12/10/2844/pdf
