RESEARCH FOCUS

Colorectal cancer (CRC) is the third most common cancer worldwide with a five-year survival rate of only 65%. Beyond genetic mutations, CRC development is driven by a dynamic interplay between cancer cells and the surrounding **tumor microenvironment** (TME). In addition, the intestinal microbiome plays a pivotal role in shaping both tumor cells and the TME. Changes in TME composition, comprising cancer-associated fibroblasts (CAFs), vascular cells, and infiltrating immune cells, often determine disease progression and response to therapy.

Funded since October 2025, the **Collaborative Research Center TRR 417** aims to harness and target the CRC microenvironment to improve existing treatments, develop new therapeutic strategies, and enable immunotherapy for sporadic CRC.

STRONG PARTNERS

The TRR 417 unites leading medical, clinician and data scientists from **Goethe University Frankfurt, Friedrich-Alexander-Universität Erlangen-Nürnberg, University of Freiburg, Georg-Speyer-Haus,** and the **Paul-Ehrlich-Institut.**

This unique interdisciplinary consortium aims to translate cutting-edge basic research into clinical practice and trains the next generation of CRC experts in Germany.

The TRR 417 is funded by the **Deutsche Forschungsgemeinschaft DFG.**

TRR 417

CELLULAR COMMUNICATION IN THE STROMA OF COLORECTAL CANCER

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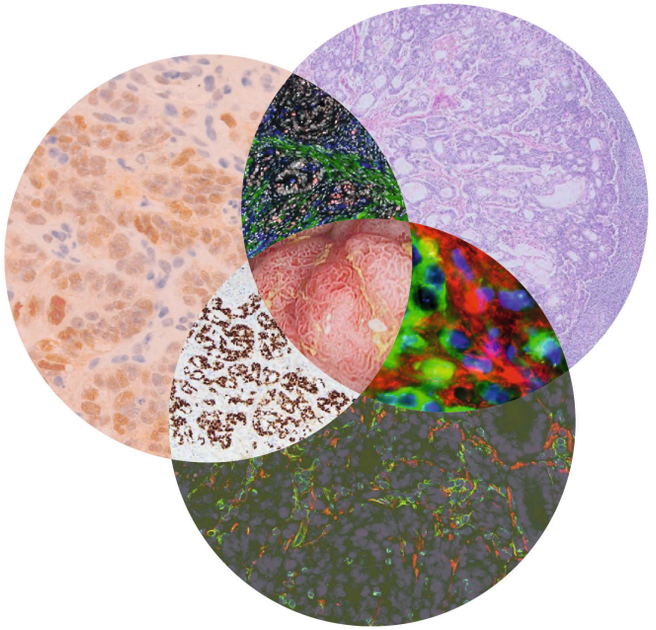
INSTITUTIONS

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FAU Friedrich-Alexander-Universität Erlangen-Nürnberg
universität freiburg
Georg Speyer Haus – Institut für Tumorbiologie und Experimentelle Therapie
Paul-Ehrlich-Institut

FUNDING

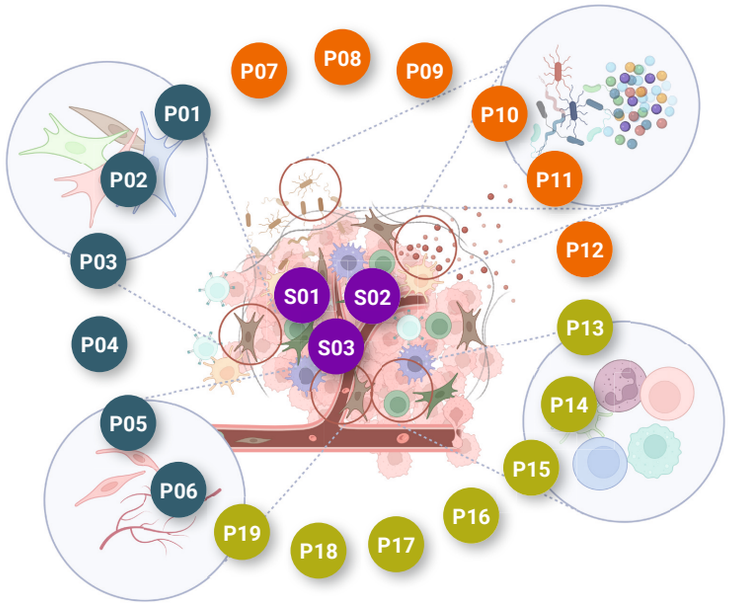
DFG Deutsche Forschungsgemeinschaft

SFB / TRR 417



CELLULAR COMMUNICATION IN THE STROMA OF COLORECTAL CANCER: FROM PATHOPHYSIOLOGY TO CLINICAL TRANSLATION

OUR RESEARCH PROJECTS



CLUSTER 1: CANCER-ASSOCIATED FIBROBLASTS AND EXTRACELLULAR MATRIX

P01 **Modulating CAF plasticity to enable immunotherapy of CRC** Florian Greten

P02 **Multimodal prediction of therapy response for rectal cancer patients** Florian Büttner, Nadine Flinner

P03 **Metastasis-predisposing extracellular matrix architecture in CRC** Priscilla Briquez, Stefan Fichtner-Feigl, Raphael Reuten

P04 **Mapping the CAF subtype-dependent reciprocal signaling in the CRC niche** Henner Farin, Marc Stemmler

P05 **The role of LIFR signaling in CAFs in CRC** Clemens Neufert

P06 **Impact of vascular plasticity on therapy responses in CRC** Claudia Günther, Elisabeth Naschberger



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CLUSTER 2: SOLUBLE MEDIATORS

P07 **The inflammasome in the TME of primary and metastasized sporadic CRC** Christopher Berlin, Olaf Groß

P08 **The role of IL-38 in shaping tumor-promoting vs. protective inflammation in CRC** Andreas Weigert

P09 **The role of stromal IL-36R signaling in colorectal tumorigenesis** Kristina Koop, Markus Neurath

P10 **Targeting the intra-metastatic microbiome in CRC** Bertram Bengsch, Reinhild Feuerstein

P11 **Role of microbial amino acid metabolism in chemotherapy response** Canan Arkan, Zuzana Tatarova

P12 **Immunomodulatory microbial metabolites as novel therapeutics for advanced CRC** Stephan Rosshart

CLUSTER 3: IMMUNE CELLS

P13 **GPR15L-dependent effects on lymphocyte infiltration and the intestinal microbiota** Tanja Müller, Sebastian Zundler

P14 **The role of γδ T cells in the TME of CRC** Rebecca Kesselring, Susana Minguet

P15 **Tumor stroma-derived signals as a potential immunotherapy resistance mechanism** Kai Hildner

P16 **Primary CRC-derived adaptive immune cells in anti-metastasis immunity** Stefan Fichtner-Feigl, Katharina Imkeller

P17 **STAT3-controlled cross-dressing of dendritic cells in anti-tumor immunity** Paul Ziegler

P18 **Identifying and overcoming CAR T cell barriers in the CRC microenvironment** Christian Buchholz, Henner Farin

P19 **Targeting colorectal liver metastasis by overcoming MYC-induced immune evasion** Armin Wiegering

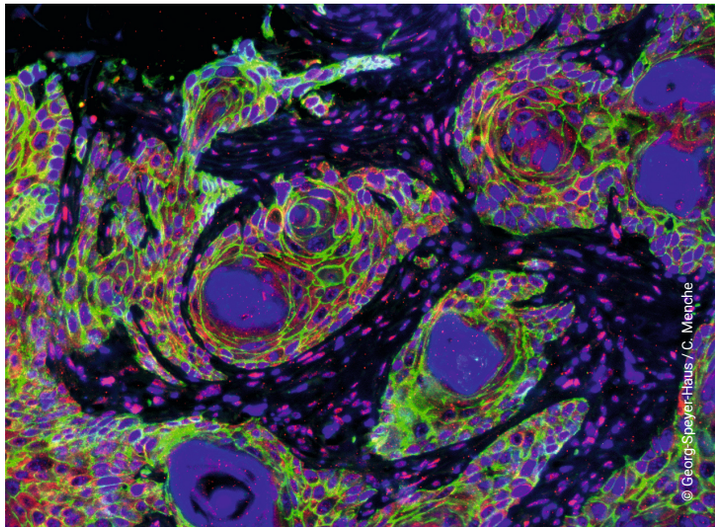
CENTRAL PROJECTS

S01 **Human tumor organoid biobanks for preclinical validation** Christopher Berlin, Florian Greten, Elisabeth Naschberger

S02 **Spatial profiling of the TME in CRC** Yvonne Reiss, Birgit Ritter

S03 **Research information infrastructure, data management and bioinformatics core** Melanie Börries, Pooja Gupta

IRTG **Integrated research training group (IRTG)** Henner Farin, Reinhild Feuerstein, Claudia Günther


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