

SCITopic

How are we doing on threshold indicators

NiCR has the ambition to become a national authority in academic oncology while also making international impact. 'From the perspective of the state administration, it was necessary to take a look at where, in the Czech Republic, there is real quality in cancer research, then link those places, and create an added value,' says Pavel Doleček, undersecretary at the Ministry of Science and Research. He adds: 'According to all available information, this ambition is being fulfilled. To paraphrase Masaryk: just like states sustain themselves with ideas that stood at their foundation, so, too, institutions such as NiCR should sustain themselves by their initial ambitions and ideas. So, if we truly managed to create

a national authority – and I believe we did – it is extraordinarily important to make sure that it helps shape the research landscape also in the future.' NiCR Director Aleksi Šedo nevertheless in this issue of the newsletter also notes that evaluation of the biomedical science in the project environment takes on a concrete – and sometimes rather awkward – form of threshold indicators. Their fulfilment is crucial if the project as a whole is to do well in the eyes of the provider and have a chance of future support and development.

[Learn more](#)

SCIGeneration

Stjepan Uldrijan: Attract new talents into science

Since the very beginning, we have been striving to view our participation in NiCR as not only an opportunity to advance science but also as a chance to present our research to the general public, attract new talents into science, and offer them the best possible support for their further development. Students involved in research supported by NiCR can gain practical experience in various modern methods of biochemistry and molecular biology.

[Learn more](#)

Karolina Škvárová Kramarzová: 'Think big!'

NiCR has enabled us to 'think big' through its scale and relative scientific freedom, an approach that has proven highly beneficial when directed toward excellent research groups. To conduct cutting-edge science in the Czech Republic, we must pursue high-risk, high-gain projects. However, such transformative science projects require extended timeframes to complete, and their continuous support is essential.

[Learn more](#)

SCIPapers

Tcf4 regulates secretory cell fate decisions in the small intestine and colon tumors: insights from transcriptomic, histological, and microbiome analyses

Lucie Janeckova..., Michal Kolar, Vladimir Korinek.

Stem Cell Research & Therapy. 2025 April

DOI: [10.1186/s13287-025-04280-y](#)
PMID: [40221753](#)

FGFR2 residence in primary cilia is necessary for epithelial cell signaling

Alexandra Nitu..., Pavel Krejci, Michaela Bosakova.

Journal of Cell Biology. 2025 April

DOI: [10.1083/jcb.202311030](#)
PMID: [40257378](#)

Robust acute myeloid leukemia engraftment in humanized scaffolds using injectable biomaterials and intravenous xenotransplantation

Daniel Bus..., Jiri Mayer, Martin Culen.

Molecular Oncology. 2025 May

DOI: [10.1002/1878-0261.13790](#)
PMID: [39840700](#)

SCICommunity



Ask the Scientist – about anything you want to know!

In high school, she sometimes even had a C in chemistry on her report card. In a family of chemists, this was a manifestation of a sort of teenage rebellion. ☺

Today, she works at the prestigious Institute of Organic Chemistry and Biochemistry of the CAS and in a research team that is part of the NiCR. Aside from her research, which focuses on the development of targeted small molecules and antibody mimetics, she is also active in the popularisation and communication of scientific results. During the COVID pandemic, she co-founded the online project 'Ask the Scientist', which aims to provide verified information on all sorts of topics. If she had the opportunity to ask a dream scientist a question, she would choose Stephen Hawking. 'It would be so cool! I probably would not understand anything, but I believe it would be an unforgettable experience,' says Tereza Ormsby.

[Learn more](#)

SCITidbits

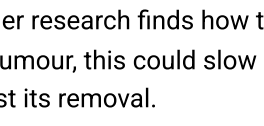
Secondary school students had a hands-on experience of 'making science'!



We want to thank all secondary school students and their teachers for taking part in our 28 workshops! Between January and June, about 250 students from 7 secondary schools in Prague, but also Kutná Hora, Příbram, Litoměřice, Most, Havířov-Podlesí, Brno, Beroun, and Hradec Králové tried out the lab with Martin Sztach, Petr Výmola, Michal Kolář, and their colleagues. The lectors are extremely pleased by the high satisfaction rating of all workshops, with an average score of 9.1 out of 10 points! Two-thirds of students even consider a future career in biochemical research. ☺

On top of that, we have prepared for selected students, highly motivated and selected by their teachers, a NiCR Summer School. It will take place in the last week of August at the Institute of Biochemistry and Experimental Oncology of the First Faculty of Medicine of the Charles University, the Institute of Organic Chemistry and Biochemistry of the CAS, Institute of Macromolecular Chemistry of the CAS, and Institute of Molecular Genetics of the CAS.

Take a look also at the



You will learn more about how the workshops with students went. ☺

SCIProgramme

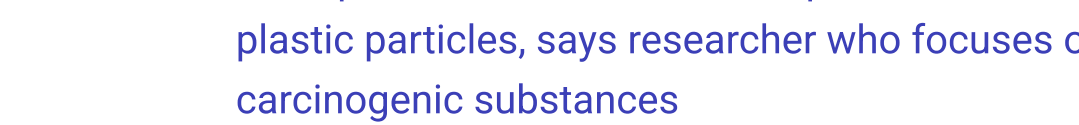
RP5: The main advances in translation oncology

In recent years, the teams of RP5 have worked, among other things, on creating a database of new preclinical models as a platform for proof-of-concept preclinical studies, on mutation and transcriptome analyses of lymphomas, they studied the adaptation mechanisms which enable the survival of lymphoma cells in deep hypoxia,

investigated the use of circulating tumour DNA for diagnosing and monitoring of lymphomas, and examined the deregulation of signalling cascades in lymphomas and new therapeutical approaches to inhibition of the PI3K-AKT signalling pathway. Their results are presented by Pavel Klener, who jointly with Ludmila Boubliková heads the RP5.

[Learn more](#)

SCIIndicators



Indicators are not only publications...

A genre picture illustrating the provider's assessment of NiCR interim report... ☺ Among the indicators we are obligated to meet in the NiCR are some that address the gender aspects of research. This pertains to two particular indicators: one that has to do with monitoring the results and outputs focused on presenting the gender aspect of conducted research (indicator no. 19) and one that deals with strengthening the relevance of the gender aspect of research, in particular by supplementing current knowledge by taking gender into account (indicator no. 20). In the first case, the provider insists that sex and gender be taken into account as a variable across all research.

In the second case, gender must enter research as just one of the variables, but the gender aspect of the study must also be commented upon, for instance in the discussion section of an article. The provider's comment nevertheless shows that we are not doing very well on these two indicators: 'Studies based on which the publications were prepared did work with samples containing males/men and females/women, but the subject of gender was not further elaborated in neither the relevant research nor in the ensuing publications. The presence of both of the sexes in a sample, while important for the quality of research, is not sufficient for listing the publication under indicator no. 20.'

SCIMedia



Czech scientists have discovered two proteins which build the 'highways' via which brain tumours spread

iRozhlas, 1 April 2025

In the future, Czech researchers might be able to slow down the growth of much-feared brain tumours. NiCR scientists have discovered that tumour cells use special brain 'highways' consisting of two proteins: collagen I and fibronectin. If further research finds how their production could be stopped in the vicinity of the tumour, this could slow down tumour growth and subsequently assist its removal.

Biobanks guard treasures for medical research

Medical Tribune, 22 April 2025

'In a certain phase of medical research, testing on cell lines or animal models is not sufficient. At that point, one needs to use real biological material', explains Roman Hrstka, executive director of the Bank of Biological Material of Masaryk Memorial Cancer Institute and national coordinator of the Czech National Node of Biobanks BBMRI.cz, who is also active in the Masaryk Institute as the head of a research team which participates in NiCR. He also adds that the Czech biobank network has already provided over 1,500 samples just to the research teams involved in the NiCR.

Hope for liver cancer treatment: Researchers have blocked in mice the protein that helps the disease to spread

iRozhlas, 15 May 2025

Czech researchers from NiCR have found a way of slowing down the growth of liver tumours. In mice, they blocked plectin, a protein which works in the cell as a sort of glue that holds it together. When it is disturbed, the cell softens and loses its ability to grow and move. The results of this research show that when this protein is targeted, it not only slows down tumour growth but also limits the formation of metastases. This new method could mean an important step ahead in the treatment of liver cancer.

AACR 2025: From the laboratory to patients' sickbed and back

Medical Tribune, 16 May 2025

An annual meeting of the American Association for Cancer Research (AACR) took place in Chicago on 25–30 April. The theme of this year's meeting was 'Unifying Cancer Science and Medicine: A Continuum of Innovation for Impact'. This reflected the vast progress achieved in cancer research that is used to benefit actual patients – and then is taken back to the laboratory. The programme also featured several research teams from NiCR which focus on cancer diagnostics and treatment.

Most problematic for health are pesticides and plastic particles, says researcher who focuses on carcinogenic substances

Ekonews, 26 May 2025

It is no simple matter to call a substance carcinogenic. 'Classification must be based on long-term research conducted on a large group of people who are exposed to increased levels of the substance', explains Pavel Rössner from the Department of Toxicology and Molecular Epidemiology of the Institute of Experimental Medicine of the CAS, who is also active in NiCR. He views plastic materials as especially problematic because they contain suspected carcinogens or hormonal disruptors, such as phthalates, bisphenols, or PFAS, also known as 'forever chemicals'.

We do not drink to health but to illness

DVTV, 15 April 2025

'People often have no idea that alcohol is linked to increased risk of cancer. In reality, though, it is responsible for many diseases, mainly cancers of the mouth and gastrointestinal tract, and even just one shot of spirits increases the risk of breast cancer in women', says NiCR Medical Director Marián Hajdúch. He also agrees that an appropriate warning should be placed on alcohol bottles, but one such warning will not change the situation – the measures should be comprehensive. Unfortunately, politicians are unwilling to take unpopular steps, even if they were to benefit the population.

In Amongst the Cells – Popularisation of Science: Hope vs Reality in Cancer Research

29 April 2025

The next edition of podcasts about science against cancer deals with how scientific discoveries become headlines – and what is lost in the process. Tereza Ormsby and Adéla Šimková talk about responsible and sensitive communication of the findings of cancer research to the general public. We go over the myths, mistakes, and hopes connected with popularisation of science, the effect of media on patients, and the importance of comprehensible but true communication. Where is the line between popularisation and sensationalism? And how could scientists and journalists improve their cooperation?

In Amongst the Cells – Science, Business, and Billions: How are Drugs of the Future Created?

6 May 2025

Development of a new drug is a marathon – it takes years, costs billions, and most candidates never make to the finish line. In this episode of podcasts about science against cancer, we meet with Marián Hajdúch, Medical Director of NiCR, and Radek Špišek (SOTIO) and delve into the fascinating and merciless world of drug development. What does the journey from a laboratory discovery to an approved drug look like? Why is drug development so expensive, and where do real innovations come from – from academia or the private sector? And what is the role of scientific startups and can Czechia, too, produce globally successful biotechnological companies?

SCICalendar

4EU+ Against Cancer Summer School

7–9 July 2025

Sorbonne, Paris

Researchers from the NiCR are fully in charge of the Czech part of the expert programme of 4EU+ Against Cancer Summer School. Their goal is to introduce especially pre-graduate students to the various components of cancer research with an emphasis on its complexity and multidisciplinary character.

Researchers' Night

26 September 2025

Prague

This year, NiCR is again joining the popularisation event which, for just one evening a year, opens the doors of hundreds of laboratories and research institutions to the general public. The jubilee twentieth Researchers' Night focuses on the subject of 'Wealth'!

CACR 2025 – Extended deadline for abstract submissions!

24–26 November 2025

Hotel NH Collection Olomouc Congress

We have good news for you: the deadline for submitting abstracts for the Czech Annual Cancer Research Meeting was extended until 1 September 2025! Also, do not forget to register! We're looking forward to seeing you in Olomouc this fall!