A BRIEF HISTORY OF THE INSTITUTE'S FOUNDATION AND DEVELOPMENT

Ukrainian (Kyiv) Research Institute of Experimental and Clinical Oncology of the Ministry of Health of the UkrSSR (now: R.E. Kavetsky IEPOR of National Academy of Sciences of Ukraine) was established on July 7, 1960, by the Resolution No. 1064 of the Council of Ministers of the Ukrainian SSR with the aim **"to strengthen research in the field of oncology, provide practical assistance to health care and training of qualified oncologists"**.

The first Director of the Institute was appointed the leading ideologist of research in the field of experimental oncology — Academician of the UkrSSR Academy of Sciences Rostyslav E. Kavetsky.

Under the leadership of R.E. Kavetsky the Ukrainian School of experimental oncologists for studying the causes, mechanisms of tumor development and designing new technologies for cancer diagnosis, treatment, and prevention was formed.



The first building of the Institute, Kyiv, Lenin Str., 37



Director of the Institute — R.E. Kavetsky

The priority direction of the R.E. Kavetsky's school becomes an investigation of the fundamental basis of the relationship between tumor and organism.

In 1964, the Academician of the Academy of Sciences UkrSSR R.E. Kavetsky became the Laureate of the O.O. Bogomolets Prize of the UrkSSR Academy of Sciences for the monograph "Tumor and Host".

The deepening of basic research in the field of molecular and experimental oncology has contributed to the transformation and reorganization of the structure of the Institute. In 1971, the Institute was renamed the "Institute of Oncology Problems" and transferred to the Academy of Sciences of the UkrSSR.

In 1972, Academician of the Academy of Sciences of UkrSSR R.E. Kavetsky, and DSci (Biol),

Professor M.F. Gamalia et al. were awarded the State Prize of the UkrSSR "For the development and implementation of radioisotope and laser equipment in health care".

During this period, many important international and national scientific forums were held on the basis of the institute:

1973 — All-Union Conference "Tumor and Host";

1974 — All-Union Symposium "Factors of Anti-carcinogenesis";

1976 — All-Union Conference "Progression and Tumors' Metastasis";

1977 — 1st International Symposium "Role of Stem Cells in Leukogenesis and Carcinogenesis" with the participation of leading scientists from France, Germany, England, USA.



R.E. Kavetsky and V.H. Pinchuk

In December 1978, the Institute of Oncology Problems of the UkrSSR Academy of Sciences was named after Rostyslav E. Kavetsky.

In 1979, the follower of R.E. Kavetsky, Corresponding Member of the AS of the UkrSSR (since 1991 — Academician of NAS of Ukraine) **Vadym G. Pinchuk** was elected on the position of Director of the Institute.



In 1979 came the first issue of the journal "Experimental Oncology" that was founded on the initiative of R.E. Kavetsky.

In the 1980-s, the central place among scientific directions of the Institute occupied the problem of carcinogenesis and anti-carcinogenesis.

The works of the Institute scientists proved the recurrence of carcinogenesis and the ability of tumor cells to de-differentiate.

The traditions of international scientific cooperation continued, and several significant international forums have been held:

1983 — 2nd International Symposium "Role of Stem Cells and Tumor Growth";

1990 — 7th "International Conference on Human Tumor Markers";

1995 — 18th "International Symposium on Clinical Hyperthermia".



V.H. Pinchuk with colleagues

Institute carried out unique studies of pathogenetic substantiation of detoxification therapy for acute radiation disease. For these investigations, outlined in the monograph "Hemosorption in the Treatment of Acute Radiation Disease", in 1982 N.P. Adamenko, O.B. Scherbitskyi et al. became Laureates of the State Prize.

The accumulated knowledge of radiation pathology mechanisms has allowed the Institute to be actively involved in the solution of urgent problems in the field of radiobiology to develop experimental approaches to overcoming the consequences of the Chernobyl disaster.

In 1991 by Resolution of the Presidium of National Academy of Sciences of Ukraine, the Institute was renamed into **"R.E. Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of NAS of Ukraine"**.

In 1994 the Institute became the associated member of the Organisation of European Cancer Institutes, OECI.

In 1996 DSci (Med) **Vasyl F. Chekhun** (from 1997 — professor, from 2000 — Corresponding Member of NAS of Ukraine, from 2006 — Academician of NAS of Ukraine) was elected on the position of the Director of the Institute.



During this period, investigations of malignant stem cells' molecular profile, features of tumor cell biology, and factors involved in the formation of their heterogeneity are deepening.

Researchers' attention is focused on molecular genetic and epigenetic disorders in the system of identification of signaling cascades of transformed cells, on searching their markers and mechanisms of drug therapy resistance.

A new scientific direction has been launched, namely: nanotechnology for key problems of oncology.



V.F. Chekhun with young scientists

In 2000, for outstanding scientific achievements in the field of experimental oncology **R.E. Kavetsky Award of NAS of Ukraine** was established.

DEPARTMENT OF BIOCHEMISTRY, PHYSIOLOGY, AND MOLECULAR BIOLOGY OF NATIONAL ACADEMY OF SCIENCES OF UKRAINE



1899–1978

R.E. KAVETSKY AWARD

founded by the Resolution of the Presidium of NAS of Ukraine, January 5, 2000, No. 4

for outstanding scientific work in the field of experimental oncology

To popularize the results of the Institute's research and actively finding partners for cooperation, important international scientific forums are actively held:

2000 — 2nd International Congress of Oncologists of CIS, "Oncology – 2000" with more than 1,000 delegates — representatives of leading cancer institutions of Europe, Asia, USA, etc;

2006 — All-Ukrainian Conference with International Participation "Molecular Basis and Clinical Problems of Drug Resistance";

2008 — International Scientific and Practice Conference "Tumor Hypoxia and Malignant Progression";

2010 — 1st International Conference "Tumor and Host: Novel Aspects of Old Problem».

For significant contribution to health care, development, and implementation of the latest diagnostic and treatment technologies, and on the occasion of the 50th anniversary, the staff of the R.E. Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of NAS of Ukraine was awarded the Honorary Diploma of the Cabinet of Ministers of Ukraine (protocol No. 21, May 26, 2010).



2015 — International Scientific and Practice Conference "Minimal Residual Disease in Solid Tumors";

2017 — International conference "Normal and Cancer Stem Cells: Discovery, Diagnosis and Therapy";

2018 — International Symposium "Fundamental Principles of Cancer Biotherapy";

2019 — 2nd International Conference "Tumor and Host: Novel Aspects of Old Problem".

2016 — International Scientific and Practice Conference "Integrated Clinical and Pathogenetic Approaches.



INSTITUTE NOWADAYS



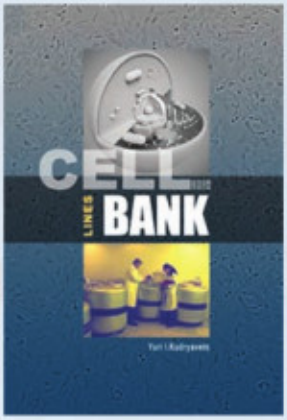
Today the R.E. Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of NAS of Ukraine — the powerful academic center that is recognized in Ukraine and the world, with 60 years of experience in the field of experimental and clinical oncology.

SCIENTIFIC TOPICS OF THE INSTITUTE:

- Studies of malignant transformation markers and identification of signs of tumor stem cells for early and differential cancer diagnosis and disease prognosis;
- Studies of tumor cells biology and their microenvironment factors aimed at developing the methodology for individualized correction of "tumor-host" interaction;
- Studies of the molecular genetic basis of metabolic processes regulation in tumor disease and design of biotechnological and sorption agents for their pharmacological correction;
- Studies of the nanoparticles and nanocomposites effects on normal and tumor cells metabolism and the development of approaches for targeted therapy;
- Studies of carcinogenic environmental factors impact on the process of oncogenesis and the development of effective prevention tools.

On the terms of the Basic Principles of GLP in the Institute operate special departments that are aimed to ensure the effective research and comprehensive implementation of pre-clinical trials of drugs, pharmacological substances, and medical devices:

- Center of Expertise for determination of carcinogenic factors and molecular markers of tumor growth;
- Center of collective use of scientific equipment "Molecular Oncology and Biotechnology";
- Institute's "Cell Lines Bank from human and animal tissues", which is the largest in Ukraine the official collection of cellular materials and has the status of National Heritage of Ukraine. Bank collection contains more than 30,000 cryopreserved samples of typical and original cell lines from normal and tumor tissues of humans and different animal species; 32 strains of transplanted tumors; 138 hybridomas; more than 14,000 samples of tumors and tissues from victims of the Chernobyl accident; virus strains; samples of plasmid DNA, bacteria and other biological materials, etc.



- The experimental biological clinic (vivarium) is intended for the maintenance and breeding of laboratory animals, as well as carrying out research.