Assoc. Prof., RNDr. Stanislav Kozubek, DrSc.

Born on September 09, 1953 in Orlová, Czechoslovakia.

Affiliation: Institute of Biophysics, Academy of Sciences of the Czech Republic, Královopolská 135, CZ-61265 Brno, Czech Republic, Tel.: 541 517 283; Mob.: 602 772 149; e-mail: kozubek@ibp.cz;

Education**:** 1972, graduated in Nuclear Physics, Charles University in Prague.

Employment: 1978-1981; physicists, Radiotherapeutical department of Ostrava Medical Centre;
1981-1989; research scientist, Joint Institute for Nuclear Research, Dubna, Russia;
1989- present; senior scientist, Institute of Biophysics, Czech Academy of Sciences, Brno, Czech Republic;
1997- 2015; head of the Department of Molecular Cytology and Cytometry, Institute of Biophysics
2005- 2017; director of the Institute of Biophysics, CAS
2017-present; member of the Council of the Czech Academy of Sciences (responsibility for evaluation)

Qualification: 1978; RNDr. Radiation biology, Charles University of Prague; 1986; CSc. (equivalent of PhD) Biophysics, Czechoslovak Academy of Sciences, Brno; thesis: "Mathematical models of the processes of radiation damage to tissues during fractionated irradiation"; 1986; DrSc. Radiation biology, Kyjev, Ukraine; thesis: "Regularities and mechanisms of the mutagenic effects of ionizing radiation with different linear energy transfer in prokaryotes". 2003; Associated Professor, Masaryk University, Brno

Language skills: Czech, English, German, Russian.

Scientific visits (long-term): 1981-1989 – research scientist, Joint Institute for Nuclear Research, Dubna, Russia; 1990-1991 - research scientist, Deutsche Foschunganstalt für Luft- und Raumfahrt, Cologne; 1991 - visiting scientist, Lawrence Berkeley Laboratory, Berkeley, USA

Scientific boards and councils: member of the Scientific Council of Masaryk University, Scientific Council of the Faculty of Sciences of Masaryk University (2005-2018), member of the General Assambly of the Academy of Sciences; 2017-present; member of the Council of the Czech Academy of Sciences (responsibility for evaluation); 2017-present; memeber of the Commission for Evaluation of Research, Development and Innovation (Research, Development and Innovation Council of the Czech Republic); Chairman of the Panel for Natural Sciences of M17+ Evaluation Methodology

Overall research activities: fractionated irradiation of cell tissue (1979-1984), lethal and mutagenic effects of radiation in cells (1984-1995), architecture of chromosomes in the nucleus, epigenetics, cellular repair (1996-present). Over 180 full-length papers in refereed international journals; these papers have been cited >3000 times (h=30).

Scientific achievements: Stanislav Kozubek (SK) has experience in the field of molecular cell biology, particularly in structural biology of the cell nucleus, in the field of fractionated irradiation of tissue and in mutagenic effects of radiation. The main achievements are published in 180 papers. Some of these publications belong to the most cited czech papers in the field of cell biology; 4 papers are cited more than 100 times. The investigations published in Blood (1997) showed proximity between genes a long time before the introduction of 3C techniques (this publication is the second most cited czech paper in Blood; reprint author form CR). A comprehensive studies on the 3D structure of the human genome published in Chromosoma (1999 and 2002) used highly automated microscopy and showed basic regularities of the formation of the genome order in the randomness of the cell nucleus. This publications represent the second and third most cited contributions to Chromosoma from CR (reprint author from CR). More recent publicatins related to the topics of this project are represented by Bartova et al. J.Histochem.Cytochem, 58, 391-403, 2010 (43 citations), Sustackova et al., J.Cell Physiol. 227, 1838-1850, 2012 (36 citations) or Legartova et al., Cells, 8, 2019 (see the list of recent publications).

Management competences: SK has established and has been leading the Department of Molecular Cytology and Cytometry (DMCC) since 1995. SK has established and maintained the first confocal facility in the Institute, based on LEICA DMRXA microscope that was equipped with the spinning disc, DMSTC motorized stage, Piezzo zmovement, MicroMax CCD camera, CSU-10 confocal unit (spinning disc), Ar-Kr laser, 2.5W with AOTF. The control software has been developed in collaboration with Faculty of Informatics, Masaryk University. The facility is still in operation and provides images of a very high quality.

Teaching and PhD students: SK jointly with Eva Bartova and Martin Falk participates in teaching at Masaryk University with semestral courses „Molecular physiology of genome“ and „Radiation Biophysics“. The following PhD students defended their theses under supervison of SK: P. Koudela, P. Mlejnek, M. Skalnikova, I., Koutna, E. Faltyskova, P. Jirsova, M. Falk, A. Cafourkova, A. Harnicarová, G. Galiova. Some of them stayed at famous foreing laboratories: P. Jirsova in Laboratory of Donna Albertson, California; A. Harnicarova in Chadwick Lab, Florida State University, G. Galiova in Belmont Lab., USA.

H-index: **30 according to the Web of Science**
Published more than 180 scientific papers
Number of citations according to the Web of Science: 3176

List of papers (2015-2019):

1. DNA Damage Changes Distribution Pattern and Levels of HP1 Protein Isoforms in the Nucleolus and Increases Phosphorylation of HP1 beta-Ser88. Legartova, Sofia; Lochmanova, Gabriela; Zdrahal, Zbynek; et al., CELLS Volume: 8 Issue: 9 Article Number: 1097 Published: SEP 2019
2. Distinct cellular responses to replication stress leading to apoptosis or senescence. Lukasova, Emilie; Rezacova, Martina; Bacikova, Alena; et al. FEBS OPEN BIO Volume: 9 Issue: 5 Pages: 870-890 Published: MAY 2019
3. Nuclear apoptotic Vol. decrease in individual cells: Confocal microscopy imaging and kinetic modeling. By: Khalo, Irina, V; Konokhova, Anastasiya, I; Orlova, Darya Y.; et al. JOURNAL OF THEORETICAL BIOLOGY Vol.: 454 P: 60-69 , 2018
4. Chromatin architecture changes and DNA replication fork collapse are critical features in cryopreserved cells that are differentially controlled by cryoprotectants. Falk, Martin; Falkova, Iva; Kopecna, Olga; et al. SCIENTIFIC REPORTS Vol.: 8, 2018
5. Consequences of Lamin B1 and Lamin B Receptor Downregulation in Senescence. By: Lukasova, Emilie; Kovarik, Ales; Kozubek, Stanislav CELLS Vol.: 7 Issue: 2 Article Number: 11 FEB 2018
6. Particles with similar LET values generate DNA breaks of different complexity and reparability: a high-resolution microscopy analysis of gamma H2AX/53BP1 foci. Jezkova, Lucie; Zadneprianetc, Mariia; Kulikova, Elena; et al. NANOSCALE Vol.: 10 Issue: 3 P: 1162-1179 JAN 21 2018
7. HDAC1 and HDAC3 underlie dynamic H3K9 acetylation during embryonic neurogenesis and in schizophrenia-like animals. Vecera, Josef; Bartova, Eva; Krejci, Jana; et al. JOURNAL OF CELLULAR PHYSIOLOGY Vol.: 233 P: 530-548 JAN 2018
8. Radiosensitization of resistant (Head and Neck) tumor cells by metal nanoparticles. Falk, M.; Stefancikova, L.; Lacombe, S.; et al. Conference: 42nd Congress of the Federation-of-European-Biochemical-Societies (FEBS) on From Molecules to Cells and Back Location: Jerusalem, ISRAEL Date: SEP 10-14, 2017.
9. PCNA is recruited to irradiated chromatin in late S-phase and is most pronounced in G2 phase of the cell cycle. Bartova, Eva; Suchankova, Jana; Legartova, Sona; et al., PROTOPLASMA Vol.: 254 Issue: 5 P: 2035-2043 SEP 2017
10. Mutations in the TP53 gene affected recruitment of 53BP1 protein to DNA lesions, but level of 53BP1 was stable after gamma-irradiation that depleted MDC1 protein in specific TP53 mutants. Suchankova, Jana; Legartova, Sona; Ruckova, Eva; et al. HISTOCHEMISTRY AND CELL BIOLOGY Vol.: 148 Issue: 3 P: 239-255 SEP 2017
11. Loss of lamin B receptor is necessary to induce cellular senescence. Lukasova, Emilie; Kovarik, Ales; Bacikova, Alena; et al. BIOCHEMICAL JOURNAL Vol.: 474 P: 281-300 Part: 2 JAN 15 2017
12. Nucleolar Reorganization Upon Site-Specific Double-Strand Break Induction: DNA Repair and Epigenetics of Ribosomal Genes. Franek, Michal; Kovarikova, Alena; Bartova, Eva; et al., JOURNAL OF HISTOCHEMISTRY & CYTOCHEMISTRY Vol.: 64 Issue: 11 P: 669-686 NOV 2016
13. Localized Movement and Levels of 53BP1 Protein Are Changed by gamma-irradiation in PML Deficient Cells. By: Legartova, Sona; Sehnalova, Petra; Malyskova, Barbora; et al. JOURNAL OF CELLULAR BIOCHEMISTRY Vol.: 117 Issue: 11 P: 2583-2596 NOV 2016
14. Effect of gadolinium-based nanoparticles on nuclear DNA damage and repair in glioblastoma tumor cells. By: Stefancikova, Lenka; Lacombe, Sandrine; Salado, Daniela; et al., JOURNAL OF NANOBIOTECHNOLOGY Vol.: 14 , JUL 28 2016
15. Two New Faces of Amifostine: Protector from DNA Damage in Normal Cells and Inhibitor of DNA Repair in Cancer Cells. Hofer, Michal; Falk, Martin; Komurkova, Denisa; et al., JOURNAL OF MED. CHEMISTRY Vol.: 59 P: 3003-3017 2016
16. Advanced Image Acquisition and Analytical Techniques for Studies of Living Cells and Tissue Sections. Franek, Michal; Suchankova, Jana; Sehnalova, Petra; et al., MICROSCOPY AND MICROANALYSIS Vol.: 22 P: 326-341 APR 201616.
17. The level and distribution pattern of HP1 beta in the embryonic brain correspond to those of H3K9me1/me2 but not of H3K9me3. Bartova, Eva; Vecera, Josef; Krejci, Jana; et al., HISTOCHEM. AND CELL BIOLOGY Vol.: 145 P: 447-461 2016
18. Distinct kinetics of DNA repair protein accumulation at DNA lesions and cell cycle-dependent formation of gamma H2AX- and NBS1-positive repair foci. Suchankova, Jana; Kozubek, Stanislav; Legartova, Sona; et al., BIOLOGY OF THE CELL Vol.: 107 Issue: 12 P: 440-454 DEC 2015
19. Post-Translational Modifications of Histones in Human Sperm. Krejci, Jana; Stixova, Lenka; Pagacova, Eva; et al., JOURNAL OF CELLULAR BIOCHEMISTRY Vol.: 116 Issue: 10 P: 2195-2209 OCT 2015
20. Localized movement and morphology of UBF1-positive nucleolar regions are changed by -irradiation in G2 phase of the cell cycle. By: Sorokin, Dmitry V.; Stixova, Lenka; Sehnalova, Petra; et al., NUCLEUS Vol.: 6 P: 301-313 JUL-AUG 2015