DEPARTMENT OF BIOCHEMISTRY AND MICROBIOLOGY

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I. STAFF

Full Professors:
Katarína Horáková, PhD., DSc.;
Milan Miko, PhD, DSc.;
Associate Profesors:
Daniela Hudecová, PhD.; Soňa Jantová, PhD.;
Assistant Profesors:
Barbora Dudová; Peter Chovanec, PhD.; Karin Kaiserová; Boris Lakatoš; Mária Mikulášová, PhD.; Helena Paulíková, PhD.; Andrea Šovčíková, PhD.;
PhD Students:
Richard Pokorný; Roman Hudec, Michal Kaliňák, Martina Poturnajová
Technical Staff:
Oľga Willantová-Secretary; Dagmar Adamíková; Gabriela Chytilová; Anna Kučinská; Margita Kosárová; Ján Škvara; Eva Sameková

II. TEACHING AND RESEARCH LABORATORIES

Laboratory of Animal Cell Cultures
Laboratory of Biochemistry of Cancer Cells
Laboratory of Fungal Biochemistry and Physiology
Laboratory of Immunochemistry
Laboratory of Microbiology

III. TEACHING

A.Undergraduate Study

1st semester (autumn)
Biology (2-0 h) Jantová, Horáková, Mikulášová,
Laboratory Practice in Biology (0-1 h) Jantová, Dudová, Šovčíková, Poturnajová, Kaiserová
3rd semester (autumn)
Microbiology I (2-0 h) Hudecová
Laboratory Practice in Microbiology I (0-2 h) Hudecová, Majtán*, Mikulášová, Dudová, Pokorný
4th semester (spring)
Biochemistry I (2-0 h) Varečka
Laboratory Practice in Biochemistry I (0-2 h) Varečka, Paulíková, Chovanec, Lakatoš, Kaiserová, Pokorný
5th semester (autumn)
Principles of Human Nutrition (2-0 h) Miko
6th semester (spring)
Laboratory Project (0-4 h) Miko, Horáková, Varečka, Hudecová, Jantová, Mikulášová, Majtán*, Dudová, Pokorný
7th semester (autumn)
Biochemistry II (2-0 h) Varečka
Laboratory Practice in Biochemistry II (0-2 h) Paulíková, Chovanec, Lakatoš, Hudec
Microbiology II (2-0 h) Mikulášová, Hudecová
Laboratory Practice in Microbiology II (0-2 h) Hudecová, Majtán*, Mikulášová, Dudová
Immunochemistry (2-0 h) Ferenčík*
Seminar in Immunochemistry (0-1 h) Ferenčík*
Laboratory Practice in Immunochemistry (0-2 h) Daussant*, Kaiserová, Hudec, Kaliňák
Biosensors (2-0 h) Labuda*
Biosensor Seminar (0-1 h) Labuda*
Biosensors Laboratory Practice (0-2 h) Labuda*
8th semester (spring)
Molecular Biology and Genetics (2-0 h) Mikulášová, Paulíková
Applied Microbiology (2-0 h) Hudecová, Majtán*
Bioenergetics (2-0 h) Miko
Laboratory Practice in Bioenergetics (0-2 h) Miko
Mechanisms of Action of Natural Compounds (2-0 h) Varečka
Mechanisms of Action of Natural Compounds-Laboratory Practice (0-2 h) Dudová, Pokorný

Laboratory Practice of the branch Biomedical Engineering, Biochemistry and Microbiology (0-4 h) Miko, Horáková, Varečka, Hudecová, Jantová, Mikulášová, Majtán*

9th semester (autumn)

Genetic Manipulations (2-0-2 h) Čertík*

Clinical Biochemistry (2-0 h) Chandoga*

Clinical Biochemistry-Laboratory Practice (0-2 h) Chandoga*

Cell cultures (2-0 h) Jantová, Horáková

Laboratory Practice of the branch Biomedical Engineering, Biochemistry and Microbiology (0-6 h) Horáková, Hudecová, Jantová, Miko, Mikulášová, Varečka, Majtán*

10th semester(spring)

Diploma Thesis Seminar (3-0 h) Miko, Horáková, Varečka, Hudecová, Majtán*

Diploma Thesis (0-27 h) Miko, Horáková, Varečka, Hudecová, Majtán*

B.PhD Study

Biochemistry Miko, Varečka

Microbiology Horáková, Hudecová

*-external teacher

IV. CURRENT RESEARCH PROJECTS

A. Cytotoxicity of novel xenobiotics and their mode of action (Milan Miko)

The primary aim of our group is the identification and evaluation of potential anti-cancer agents. The main results are as follows:

1. Fourteen substituted 4-anilinoquinazolines, seventeen plant extracts and four preservative compounds for cosmetics were tested for cytostatic, genotoxic, anticancer and antibacterial effects. The most active 4-anilinoquinazolines were substituted by chlorine or bromine group in the aromatic ring, in the pyrimidine ring by morpholine group and in the aniline skeleton by nitro group in position 4 or 2. Four anilinoquinazolines inhibited growth of tumor cell lines HeLa, B16 and L1210 and exhibited antiprotease effect on plasmine. Concentration 5.2 μmol/L of 6-bromo-2-(morpholin-1-yl)-4-anilinoquinazoline induced a significant increase of filamentous actin in the transformed HepG2 cells.A 35 % degradation of HeLa cells was found after 72 h treatment with 62.5 μg/mL of the extract isolated from *Stephanandra tanakae*. The 100 % lysis of HeLa cells was observed after 72 h treatment by 125 μg/mL concentration of the extract prepared from *Gymnocladus dioicus*. The extracts from *Ligustrum devayanum* and *Ligustrum vulgare* are specifically effective only with HeLa cells. On the other hand, the extract prepared from *Gymnocladus dioicus* is effective on the bacteria and on the HeLa cells too. Preservative Bronopol demonstrated the highest cytotoxic effect on the proliferation of V79 and VH10 fibroblast cell lines.

2. In the frame of mode of action of 8 novel isotiocyanate derivatives (ITCs) was found out, that two carcinoma cell lines (A2780, A431) appeared extremely sensitive to the majority of the tested ITCs (ID_{50} = 2.2-8.0 μmol/l). The tested ITCs modified the cell cycle of carcinoma cell lines (A2780, A2780/ADR, A431) and sarcoma cell lines (B-5GT, BP6-TU2), as well as leukemic cell line (JURKAT), mainly at 10 μmol/l and 5 μmol/l. The gradual inhibition of cell proliferation was observed, characterised by decreasing of percentage of cells in G_0/G_1 phase and accumulation of cells in S and G_2/M phases of the cell cycle. Four from the five tested ITC derivatives showed the ability of strong induction of apoptosis (34-27%) in A2780 carcinoma cells.

3. Four trisubstituted quinazoline derivatives exerted a significant effect on *E. coli, P. aeruginosa*, *S. aureus* and *B. subtilis* (IC_{50} < 100 mg/l) and influenced the specific growth rate. The results of primary screening for cytotoxicity of eighteen plant extracts showed that the extracts which have manifested 100% toxicity on HeLa cells come from the family Fabaceae, Rosaceae, Oleaceae and Staphyleaceae. The cytotoxically effective extracts represent three different types of cytotoxic effect – acute, delayed and combined effect. The effect of Cu tetraaza macrocyclic complex on the glutathione status was examined and the possible mechanism of this anticancer-membrane targeting drug was studied. In the frame of genotoxic effects of Cu(II) complexes of mephenamate, flufenamate, acetylsalicylate was found that these compounds statistically significantly decreased the number of revertants induced by 2-aminoanthracene and 2-aminofluorene. This antimutagenic activity is associated with the copper properties to participate in a number of different biological processes and its interaction with DNA. The genotoxic effects of lignin and selected degradation products of lignin were studied.

B. Biochemical processes underlying fungal differentiation and secondary metabolism (Ľudovít Varečka)

In the project devoted to study the transport processes in filamentous fungi several aspects of transport and physiology were studied.

In *Trichoderma viride* the process of chloride transport was studied by means of ^{36}Cl radionuclide. It was found that chloride anions enter the vegetative mycelia in a saturatable, pH- and temperature-dependent

manner with selectivity for chlorides and bromides. Further properties of transport suggest that chloride anions are transported by a specific and electrically silent transport protein. In *Penicillium simplicissimum* the process of citrate transport into the vegetative mycelia has been described and the conditions were found which led to the induction of novel citrate uptake system driven by protonmotive force. Its role in the citrate metabolism is being currently analysed.

In the project devoted to study the conidiation and physiology of filamentous fungi, the physiology of development and conidiation has been studied. It was found that the conidiation of *Trichoderma* observed in the dark is induced neither by starvation nor steric constraints and probably could be related to the genetical program of the organism. This notion could be supported by the isolation of mutants with delayed conidiation but normal growth characteristics. Further, the changes of the energy metabolism were studied in the submerged mycelia which revealed a strong dependence of various parameters (respiration, citrate production, etc.) on the developmental status which complement our previous data concerning the Ca^{2+} uptake or glutamate decarboxylase activity and suggest that there rate of metabolism is a function of developmental stage of mycelia.

V. COOPERATION

A.Cooperation in Slovakia

Institute of Chemistry, Slovak Academy of Sciences, Bratislava
Institute of Animal Physiology and Biochemistry, Slovak Academy of Sciences, Bratislava
Institute of Molecular Physiology, Slovak Academy of Sciences, Bratislava
Institute of Animal Biochemistry and Genetics, Slovak Academy of Sciences, Ivánka pri Dunaji
Cancer Research Institute, Slovak Academy of Sciences, Bratislava
Faculty of Pharmacy, Comenius University, Bratislava
Faculty of Natural Sciences, Comenius University, Bratislava
Institute of Preventive and Clinical Medicine, Bratislava
Institute of Virology, Slovak Academy of Sciences, Bratislava
Dairy Research Institute, Žilina
Department of Chemistry, Paedagogical Faculty, University, Trnava
Department of Medical Chemistry, Biochemistry and Clinical Biochemistry, Faculty of Medicine, Comenius University, Bratislava
Department of Molecular Biology, Faculty of Natural Sciences, Comenius University, Bratislava
Institute of Immunology, Faculty of Medicine, Comenius University, Bratislava

B.International Cooperation:

Laboratoire du Biomembranes et Messagers Cellulaires, Université Paris XI, Orsay, France (Dr. Francoise Giraud)
Laboratory of Cell Signalling, Nagoya University Bioscience Center, Nagoya, Japan (Prof. Dr. Shoshi Toriyama)
Institut für Mikrobiologie, Universität zu Innsbruck, Innsbruck, Austria (Prof. Dr. Wolfgang Burgstaller)
Botanisches Institut, Friedrich Wilhelms Universität, Bonn, Germany (Dr. Udo Hoelker)
ReaD VUFB, a.s. Prague, Czech Republic
Liverpool John Moores University, Liverpool, UK
-Electron microscopy of photo-induced conidiation and dimorphism in Fungi.
Université de Genéve, Genéve, Suisse
-Biochemistry and molecular biology of photo-induced conidiation in Fungi.
European Organisation on Research and Treatment of Cancer, Screening and Pharmacology Group, University of Tokushima, Japan
-Uncouplers of oxidative phosphorylation.
Institute of Food Research, Norwich, UK
-Rapid, specific detection of *Listeria monocytogenes* by antibody-based techniques and on-line sensor technology.
Institute of Chemical Technology, Prague, Czech Republic
- Rapid, specific detection of *Listeria monocytogenes* by antibody-based techniques and on-line sensor technology.
MILCOM a.s., Dairy Research Institute, Prague, Czech Republic
- Rapid, specific detection of *Listeria monocytogenes* by antibody-based techniques and on-line sensor technology.
Dublin City University, Dublin, Ireland
- Rapid, specific detection of *Listeria monocytogenes* by antibody-based techniques and on-line sensor technology.

C.Membership in Domestic Organizations and Societes:

Slovak Society for Biochemistry and Molecular Biology, Bratislava (M. Miko, Ľ. Varečka)
Slovak Medical Society, Bratislava (S. Jantová)

Czecho-Slovak Society for Biochemistry, Bratislava (S. Jantová)
Czecho-Slovak Society for Microbiology, Bratislava (K. Horáková, D. Hudecová, M. Mikulášová)
Czecho-Slovak Society for Biology, Brno (K. Horáková, S. Jantová, M. Mikulášová)
Oncological Society of the Slovak Medical Society, Bratislava (K. Horáková)

D.Membership in International Organizations and Societes:

International Society for the Study of Xenobiotics, Bethesda, MD, U.S.A. (M. Miko)
European Association for Cancer Research, Nottingham, U.K. (M. Miko)
European Organisation on Research and Treatment of Cancer, Moerkapelle, Netherland. (M. Miko)
European Tissue Culture Society (K. Horáková)
EUROTOX-European Societies of Toxicology, Turku, Finland (K. Horáková, S. Jantová, M. Mikulášová, A. Šovčíková)

F.International Scientific Programmes:

1. INCO COPERNICUS

a) project PL 979012, „Rapid, specific detection of *Listeria monocytogenes* by antibody-based techniques and on-line sensor technology.„ (K. Horáková)

contract No. ERB IC15-CT98-0902 (1999-2001)
Participating organizations:
Institute of Chemical Technology, Prague (CZ)
Institute of Food Research, Norwich (UK)
Slovak Univerzity of Technology, Bratislava (SK)
Dublin City University, Dublin (I)
MILCOM a.s., Dairy Research Institute, Prague (CZ)
Dairy Research Institute, Žilina (SK)

G.Visitors from Abroad:

Prof. Dr. Jean Daussant, C.N.R.S., Meudon, France, November 2001 (10 days)

H.Visits of Staff Members and PhD Students to Foreign Institutions:

M. Kaliňák Universität Innsbruck, Innsbruck, Austria (90 days)
R. Pokorný Friedrich Wilhelms Universität, Bonn, Germany (90 days)
B. Dudová XXIst Xenobiochemical symposium. Dolní Věstonice (Czech Republic), May-June 2001 (2 days)
M. Miko XXIst Xenobiochemical symposium. Dolní Věstonice (Czech Republic), May-June 2001 (2 days)

VI. THESES AND DISSERTATIONS

A.Graduate These (MS Degree) for state examinations after five years of study (supervisors are written in brackets):

Cariková S.: Screening and mode of cytotoxic action of chosen xenobiotics**.** (M. Miko)
Čavojcová M.: Cytotoxicity and apoptotic potential of selected isothiocyanate derivatives. (K. Horáková)
Dudíková J.: Bioactive polypropylene fibres on the basis of Irgasan. (D. Hudecová)
Furjészová K.: Identification of virulence markers of *Salmonella enteritidis* strains isolated from food and clinical samples. (V. Majtán*)
Horváth V.: Biological effects of some quinazoline derivatives. (S. Jantová)
Hudec R.: Using immunochemical and chromatography methods in calcium transport study in human red blood cells. (Ľ. Varečka)
Kaliňák M.: Transport of the citric acid into the mycelia of *Penicillium simplicissimum*. (Ľ. Varečka)
Kamenistá A.: Characterization of chlorpromazine-resistant *Trichoderma viride* mutants. (D. Hudecová)
Kamodyová M.: Optimalization of two-plasmid system for identification of promoters controlled by RNA-polymerase containing stress factor δ^E. (J. Kormanec*)
Krabáč B.: The influence of mineral fibrous dust on mammalian immune system. (J. Tulinská*)
Lábaj J.: The role of lignin in reduction of genotoxic damage of mammalian cells. (D. Slameňová*)
Luptáková I.: Aging of *Trichoderma viride* grown up in the submerged and surface cultivation. (Ľ. Varečka)
Ľuptovcová M.: Modulation of glutathione metabolism and chemotherapy. (H. Paulíková)
Mellenová H.: Effect of new bisquaternary ammonium salts on *Stenotrophomonas maltophilia*. (V. Majtán*)
Roľková G.: Genotoxic and antimicrobial activity of selected derivatives of quinazolines. (M. Mikulášová)
Teplická J.: The study of different types of lignin considering to their antimicrobial and genotoxic effects. (M. Mikulášová)
Trutzová R.: Imunochemical detection of the patological forms of tau protein in the brain of the patient with Alzheimer disease. (E. Kontseková*)

-*external teacher

B. Dissertations (PhD.):

Chovanec P.: Metabolic aspect of vegetative growth and conidiation of *Trichoderma viride*. (Ľ. Varečka)
Strigáčová J.: Antimicrobial (biological) activity of selected synthetic or natural compounds. (D. Hudecová)
Šovčíková A.: Antimicrobial activity and the mode of action of isothiocyanate derivatives. (K. Horáková)

VII. PUBLICATIONS

A. Journals (*registered in Current Contents)

[1] Brtko J., Hudecová D., Bransová-Bobálová J., Novotný L., Eybl V., Melník M., Uher M.: Kojic acid: a superior source for preparation of biologically active compounds (current experience). Biomarkers Environment 4, 26-30, (2001).

[2]* Dudová B., Hudecová D., Pokorný R., Mikulášová M., Palicová M., Segľa P., Melník M.: Copper complexes with bioactive ligands. Part I - Antimicrobial activity. Folia Microbiol. 46 (5), 379-384, (2001).

[3]* Henselová M., Hudecová D.: Microbial seed contamination, one of the possible causes of low germination rate in Karwinskia humboldtiana (Rhamnaceae). Folia Microbiol. 46 (6), 000-000, (2001).

[4]* Hojerová J., Jantová S., Hanusová B., Vollek V.: Antimicrobial efficacy of some interesting preservatives for cosmetics. SOFW-Journal 8, 9-15 (2001)

[5]* Horáková K., Šovčíková A., Seemanová Z., Syrová D., Bušányová K., Drobna Z., Ferenčík M.: Detection of drug-induced, superoxide-mediated cell damage and its prevention by antioxidants. Free Radic. Biol. Med. 30(6), 650-664, 2001

[6]* Chovanec P., Hudecová D., Varečka Ľ.: Vegetative growth, aging – and light induced conidiation of Trichoderma viride cultivated with different carbon sources. Folia Microbiologica 46(5), 417-422, 2001

[7]* Jantová S., Nagy M., Rúžeková Ľ., Grančai D. Cytotoxic effects of plant extracts from the families Fabaceae, Oleaceae, Philadelphaceae, Rosaceae and Staphyleaceae. Phytother.Res. 15, 22-25 (2001)

[8]* Jantová S., Urbančíková M., Maliar T., Mikulášová M., Rauko P., Čipák Ľ., Kubíková J., Stankovský Š., Špirková K. Biological activity of some 4-anilinoguinazolines: cytotoxic, genotoxic and antiprotease effects, induction of necrosis and changes of actin cytoskeleton. Neoplasma ,48 (1), 52-60 (2001)

[9]* Jantová S.: Stratégia vyhľadávania nových látok účinných proti mikróbnym a nádorovým bunkám. The strategy of seeking of new compound effected against microbial and cancer cells. Skripta Med. 2, 130-131 (2001)

[10] Jantová S., Hojerová J., Hanusová B., Mikulášová M.: Cytotoxická a genotoxická aktivita vybraných konzervačných látok pre kozmetické prostriedky. Cytotoxic and genotoxic activity of certain preservative agents in cosmetics (in Slovak) Česká a slovenská farmacie, 5, 238-242 (2001)

[11]* Koman M., Moncoľ J., Hudecová D., Dudová B., Melník M., Korabik, M., Mroziński J.: Copper(II) pyridine-2,6-dicarboxylates. Coordination and distortion isomers of [Cu(pydca)(H2O)2]. Polish J. Chem. 75, 957-964, (2001).

[12]* Košíková B., Alexy P., Mikulášová M., Kačík F.: Characterization of biodegradability of lignin-polyethylene blends. Wood research 46 (1), 31-36 (2001)

[13]* Mikulášová M., Košíková B.: Effect of blending lignin biopolymer on biodegradability of polyolefin plastics. World Journal of Microbiology and Biotechnology 17(6), 601-607 (2001)

[14]* Miko M., Turňa J., Stuchlík S., Souček R.: Oracine a novel inhibitor of topoisomerases I and II. 12th Mediterranean Congress of Chemotherapy, Morocco, November 11-14, 2001. Ed. H.Himmich. Monduzi Editore, Bologna, Italy, p.331-338

[15]* Strigáčová J., Hudecová D., Mikulášová M., Varečka Ľ., Lásiková A., Végh, D.: Novel oxindole derivatives and their biological activity. Folia Microbiol. 46 (3), 187-192, (2001).

[16]* Strigáčová J., Chovanec P., Liptaj T., Hudecová D., Turský T., Šimkovič M., Varečka Ľ.: Glutamate decarboxylase activity in Trichoderma viride conidia and developing mycelia. Arch. Microbiol. 175, 32-40, (2001).

[17] Strigáčová J., Hudecová D.: Metodické aspekty stanovenia antimikrobiálnej aktivity. Methodical aspects of the assessment of antimicrobial activity (in Slovak). Biologické listy 66 (2), 113-124, (2001).

[18]* Sulo P., Hudecová D., Properová A., Bašnák I., Sedláček I.: 2,5-Diketo-D-gluconate production by a mixed culture of two newly-isolated strains: Flavimonas oryzihabitans and Pseudomonas cepacia. Biotechnol. Lett. 23, 693-696, (2001).

[19]* Šimkovič M., Lakatoš B., Tsuji F.I., Muto S., Varečka Ľ.: The effect of azalomycin F on the Ca2+ homeostasis in Trichoderma viride and Saccharomyces cerevisiae. Gen. Physiol. Biophys. 20, 131-144, (2001)

[20]* Šovčíková A., Mikulášová M., Horáková K., Floch Ľ.: Antibacterial and mutagenic activities of new isothiocyanate derivatives. Folia Microbiol. 46 (2), 113-117 (2001)

[21] Šimkovič M., Kaliňák M., Liptaj T., Pronayová N., Burgstaller W., Varečka Ľ.: Characterization of an inducible citrate uptake systems in Penicillium simplicissimum. in press

[22]* Lakatoš B., Kaiserová K., Šimkovič M., Orlický J., Knéz V., Varečka Ľ.: The effect of boromycin on the Ca^{2+} homeostasis. Mol.Cel. Biochem. 000: 000-000, (2001)

B. Conferences (*International conferences)

[1] Augustín J., Hudecová D.: Produkcia hydroláz z polysacharidov u Aureobasidium pullulans. Production of hydrolases in Aureobasidium pullulans (in Slovak). In: 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms, Košice (Slovakia), Sept. 5-9, 2001, p. 114. (Pr)

[2]* Dudová B., Hudecová D., Chovanec P.: Antimikrobiálna aktivita série novosyntetizovaných komplexov Cu(II) so Schiffovými bázami. Antimicrobial activity of the series of new synthesised Cu(II) complexes with Schiff´s bases (in Slovak). In: XXIst Xenobiochemical symposium. Dolní Věstonice (Czech Republic), May 30 - Jun 1, 2001, p. 60. (Po)

[3]* Henselová M., Hudecová D.: The causes of low germination rate in Karwinskia humboldtiana seeds (Rhamnaceae). In: IXth Days of plant physiology. České Budějovice (Czech Republic), Sept. 17-21, 2001, p. 75. (Po)

[4]* Horáková K., Greifová M., Seemanová Z., Gondová B., Wyatt G.M.: A microplate method for monitoring of *Listeria monocytogenes* growth kinetics and the influence on the expression of p60 in selected enrichment media. In: VIth International Conference on Agri-Food Antibodies, Prague 2nd-5th October 2001, Czech Republic, p.75 (Po)

[5] Horáková K., Greifová M., Seemanová Z., Gondová B., Wyatt G.M.: Development of a microplate method for characterization of *Listeria* species growth kinetics and the influence of selected media on p60 expression. In: 22nd Congres of the Czechoslovak Society for Microbiology – Health and Microorganisms, Košice (Slovakia), 5th-9th september 2001, p.174 (Po)

[6] Hudecová D., Dudová B., Valent A.: Antimikrobiálna aktivita Cu(II) komplexov s N-donorovými ligandami. Antimicrobial activity of Cu(II) complexes with N-donor ligands (in Slovak). In: 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms, Košice (Slovak Republic), Sept. 5-9, 2001, p. 179. (Pr)

[7] Hudecová D., Marcinčin A., Augustín J.: Bioaktívne textilné vlákna na báze Irgasanu. Bioactive textile fibres on the base of Irgasene (in Slovak). In: 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms, Košice (Slovak Republic), Sept. 5-9, 2001, p. 47. (Pr)

[8] Hudecová D., Strigáčová J., Dudová B.: Biologické účinky novosyntetizovaných derivátov chinolínu. Biological effects of new synthesised derivatives of quinine (in Slovak). In: 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms, Košice (Slovak Republic), Sept. 5-9, 2001, p. 180. (Pr)

[9]* Hudecová D., Dudová B., Uher M.: Tiomočovinové arylfuránové deriváty a ich antimikróbna účinnosť. Thiourea arylfuranyl of derivatives and their antimicrobial activity (in Slovak). In: XXIst Xenobiochemical symposium. Dolní Věstonice (Czech Republic), May 30 - Jun 1, 2001, p. 59. (Po)

[10] Hudecová D., Uher M., Koreňová A., Melník M., Brtko J.: Deriváty kyseliny kojovej - perspektívny zdroj bioaktívnych zlúčenín využívateľných v ochrane rastlín. Derivatives of kojic acid - perspective source of bioactive compounds applicable in plant protection (in Slovak). In: 53rd Congress of Chemical Societies. Banská Bystrica (Slovakia), Sept. 3-6, 2000, I-PO22, p. 198-199. (Po)

[11] Chovanec P., Liptaj T., Prónayová N., Varečka Ľ.: Rast a metabolizmus Trichoderma viride pri obmedzenej dostupnosti kyslíka. The growth and metabolism of Trichoderma viride in limited oxygen conditions (in Slovak). Drobnicov memoriál, Smolenice (Slovak Republic), 8.-9.11. 2001, s.54-55

[12]* Hojerová J., Jantová S., Kanďárová H.: Verification of the fibroblast cell lines for the toxicity testing of cosmetics. In: Abstracts of International Symposium on Promotion of the Three Rs Concept in Reaction to Animal Experimentation in Slovakia, Slovenia and the Czech Republic, Prague (Czech Republic), June 4-6 (2001) ISBN: 80-86313-05-0 (PPr)

[13]* Jantová S., Paulíková H.: Vyhľadávanie nových potenciálnych protinádorových látok in vitro. The search of new potential anticancer compounds in vitro.(in Slovak) In: XXIst Xenobiochemical symposium. Dolní Věstonice (Czech Republic), May 30 - Jun 1, 2001, p.40-41 (Po)

[14]* Jantová S., Slameňová D., Čipák Ľ., Horváth V.: Biological activity of 9-bromo-5-morpholino-tetrazolo[1,5-c]quinazoline. In: Abstracts of XVI. Biologické dny Olomouc (Czech Republic), 5. - 7.9., p.117 (2001) ISBN 80-244-0327-7 (Po)

[15]* Karamonová L., Rauch P., Wyatt G.M., Greifová M., Horáková K.: Production of antibodies to Listeria virulence proteins and development of an ELISA for *L. monocytogenes*. In: VIth International Conference on Agri-Food Antibodies, Prague 2nd-5th October 2001, Czech Republic, p.115, (Po)

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