Development of novel drugs against tuberculosis and its multidrug-resistant forms

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The project deals with the development of novel antitubercular agents active against resistant strains of Mycobacterium tuberculosis, dissemination of which is a serious global problem. The project is based on the collaboration of the Faculty of Pharmacy of the Charles University in Prague, Centre of Biological Defence in Těchonín, and Faculty of Natural Sciences of the Comenius University in Bratislava. Faculty of Pharmacy deals with the design and synthesis of new molecules, evaluation of their toxicity and in vitro antimycobacterial activity, Faculty of Natural Sciences in Bratislava deals with the determination of their mechanism of action. The evaluation of in vivo antimycobacterial activity is performed in Centre of Biological Defence in Těchonin, specialized institute fully equipped for handling with the most dangerous infection agents.

Selected outputs

- WO2016/091228 A1 (PCT/CZ2015/000126) Roh J., Němeček J., Hrabálek A., Klimesova V., Karabanovich G., Pavek P., Sychra P. Substituted phenyltetrazole, its use and pharmaceutical preparation containing the same
- G. Karabanovich, J. Zemanová, T. Smutný, R. Székely, M. Šarkan, I. Centárová, A. Vocat, I. Pávková, P. Čonka, J. Němeček, J. Stolaříková, M. Vejsová, K. Vávrová, V. Klimešová, A. Hrabálek, P. Pávek, S. T. Cole, K. Mikušová, J. Roh.* Development of 3,5-Dinitrobenzylsulfanyl-1,3,4-Oxadiazoles and Thiadiazoles as Selective Antitubercular Agents Active Against Replicating and Nonreplicating Mycobacterium tuberculosis. J. Med. Chem. 2016, 59, 2362?2380.
- Karabanovich G., Roh J., Smutný T., Němeček J., Vicherek P., Stolaříková J., Vejsová M., Dufková I., Vávrová K., Pávek P., Klimešová V., Hrabálek A. 1-Substituted-5-[(3,5-dinitrobenzyl)sulfanyl]-1H-tetrazoles and their isosteric analogues: A new class of selective antitubercular agents active against drug-susceptible and multidrug-resistent mycobacteria. Eur. J. Med. Chem. 82, 2014, p. 324-340.