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IN VIVO EVALUATION OF ANTITUBERCULOTIC ACTIVITY OF AGENTS WITH EFFICACY AGAINST *MYCOBACTERIUM TUBERCULOSIS*

RESEARCH AREA & EXCELLENCE

The Hrabalek Group currently pursues research in potential antituberculosis agents based on substituted nitrogen heterocycles with extraordinary antituberculotic activity. Agents of this group are considerably active (up to 0.03 μmol.l^{-1}) *in vitro*, indicate very low toxicity *in vitro* and *in vivo*, genotoxicity and cytotoxicity. The Group has all the resources necessary for reliable research, including monitoring of efficacy and toxicity *in vivo*.

Monitoring takes place in the Central Military Health Institute, Centre of Biological Defence in Těchonín. It is a specialized medical institution equipped with vivarium and BSL 3/4 laboratories, intended for work with high-risk microorganisms. It has all necessary permissions for these activities:

- permission for work with high risk microorganisms was issued by the State Office for Nuclear Safety,
- permission for the use of laboratory animals was issued by the Ministry of Agriculture of the Czech Republic.

In cooperation with the Faculty of Pharmacy in Hradec Králové (Charles University in Prague), and the Centre of Biological Defence in Těchonín, the method entitled *In vivo* evaluation of antituberculotic aktivity of agents with efficacy against *Mycobacterium tuberculosis* – was developed and verified. *In vivo* tests using this method and the unique equipment are now available also for scientists from other scientific institutions as well as for scientists from development departments of private companies.

GENERAL DESCRIPTION

Low molecular weight compound (LMWC) is administered per os in given dose to mouse standardly infected with *M. tuberculosis* H37Rv strain. The antitubercular effect of the LMWC is studied after one, two or three months of the administration. On the last day of the treatment period the number of *M.tuberculosis* colony forming units (CFU) in lungs and spleen are evaluated. The antituberculosis effect of studied LMWC is compared with untreated control and control treated with standard antituberculosis drugs (isoniazid, rifampicin or pyrazinamide) or their combination. The experimental animals are BALB/c mice. The permission for the use of laboratory animals was given by the Ministry of Agriculture of the Czech Republic (Reg. No. 53093/2013-MZE-17214). All conditions under which animals are treated are in accordance with Act No. 246/1992 Coll., as amended. We offer the above mentioned method for commercial testing of samples (this procedure will be secured by MTA agreement) and processing of the final report which involves:

- Number of *M. tuberculosis* CFU in lungs and spleen in LMWC-treated mice. The number of CFU in lungs and spleen of every mouse involved in this study group is reported.
- Number of *M. tuberculosis* CFU in lungs and spleen in isoniazid and/or rifampicin and/or pyrazinamide-treated mice. The number of CFU in lungs and spleen of every mouse involved in this study group is reported.
- Number of *M. tuberculosis* CFU in lungs and spleen in untreated mice. The number of CFU in lungs and spleen of every mouse involved in this study group is reported

COOPERATION OFFER

We would like to offer you the cooperation in form of contract research. We are able to prepare an offer exclusively for you and for your needs, according to your specific requirements. Please do not hesitate to contact us.