

Biochemistry 2021: CRP promoter response to complete Freund's adjuvant immune stimulation- Lubomir Ondruska, V Parkanyi, D Vasicek, R Jurcik, E Hanusova, J Vasicek and A Balazi- National Agricultural and Food Centre, Slovak Republic

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Abstract

The injections of adjuvants to animals often induce inflammatory reactions. Inflammatory reactions are one of the potential safety concerns that are evaluated in the framework of vaccine safety testing. In nonclinical studies, the assessment of the inflammation relies notably on the measurement of biomarkers like C-reactive protein (CRP). This study was aimed at evaluating the respective value of inflammation biomarker in different rabbit CRP promoter genotypes. Together 60 of crossbred rabbit line, based on New Zealand white rabbits different CRP promoter genotypes -119AC and -119AA (identified SNPs from start of transcription) were analyzed. In the 60 days of age all rabbits were subcutaneously injected with 0.125 ml (per kg of live weight) of Complete Freund's Adjuvant (CFA), with content of 125 µg heat-killed and dried Mycobacterium tuberculosis. Peripheral blood for ELISA analyses of CRP in the blood plasma from each rabbit was taken from the arteria auricularis centralis before and 48 hours after subcutaneous injection. Our results showed that the levels of CRP in blood plasma of rabbits before CFA injection in the genotype -119AC were significantly lower ($P < 0.001$) compare with -119AA. The CFA injection statistically increased the level of blood plasma CRP after 48 hours in the -119AC (up to threefold increase, $P < 0.001$) and also in genotype -119AA ($P < 0.01$). It caused that 48 hours after CFA application, already were no observed statistically significant differences between genotypes. The results with observed differences in CRP plasma level between selected different genotypes can be useful in applications of this animal model for the other studies related to the development and testing of new vaccines, immunization experiments, classifications of individuals in the early stages of ontogeny or investigation of the single nucleotide polymorphisms of rabbit CRP promoter.

Biography

Lubomir Ondruska has his expertise in genetics, breeding and reproduction of farm animals. He has specialized in genetics, physiology, reproduction of rabbits and use of ELISA techniques and molecular genetic techniques.

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