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ABSTRACT

(thesis towards the PharmDr. degree)

Optimization of allergic asthma model in laboratory rat

The aim of this thesis was the optimization of allergic asthma model in laboratory rats as experimental animals. More specifically, based on the determination/quantification of the number of cells (neutrophils, eosinophils, macrophages and lymphocytes) in bronchoalveolar lavage of Wistar rats, we attempted to determine the optimal time interval (1 hour or 24 hours) needed for the manifestation of an adequate allergic reaction after antigen challenge. Subsequently, we compared Wistar rats with Brown Norway rats over this time interval, and more parameters in Brown Norway rats were examined, specifically the level of eosinophil peroxidase and proteins in bronchoalveolar lavage fluid. We evaluated the induction of the tested model in comparison with non-allergic animals.

In conclusion, (1) the time interval of 24 hours after the antigen challenge is more appropriate for the assessment of the selected model of allergic asthma; the time of one hour was not sufficient for the development of the allergic reaction. (2) Considering all evaluated parameters, Brown Norway rats are more suitable than Wistar rats.