

ABSTRACT

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Title of rigorous thesis: Effects of new quinazoline derivate on the respiratory system

The diseases of airways are a grave health, social and economic problem. To treatment of asthma is traditionally used an Asiatic plant *Justicia adhatoda*, *Acathaceae*. For therapeutic effects of plant are responsible quinazoline alcaloids vasicine and vasicinone.

The aim of this presented work was to determine a bronchodilator potential of derivates of quinazoline alcaloids, VN-027 (4-[3-(piperidine-1-yl)propyloxy]pyrimidine) and VN-033 (2-[3-(piperidine-1-yl)propylsulphanyl]quinoxaline). For evaluation theirs relaxing effect on smooth muscle of airway we used a method of isolated rat trachea.

After pre-contraction by carbachol (10^{-5} M) was every sample of smooth muscle of trachea relaxed by growing concentration (10^{-7} to 10^{-2} M) of test substances, for maximal relaxing of trachea we used theophylline (10^{-2} M) in the end of experiment. From grained values we built the DRC curves in programme *GraphPad* and calculated the values of EC_{50} ($1,115 \cdot 10^{-3}$ for VN-027 and $6,404 \cdot 10^{-6}$ for VN-033). The results were compared with a standard drug of theophylline ($EC_{50} = 2,090 \cdot 10^{-3}$). On base of values EC_{50} had both of tested substances higher relaxing effects on smooth muscle of rat than the standard drug of theophylline.