

ABSTRACT

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Title of Doctoral Thesis: Novel quinazoline derivatives with biological activity

This thesis is divided into two parts, both dealing with the synthesis of novel quinazoline derivatives and evaluation of their biological activity.

The first part is focused on the synthesis of bronchodilatory active derivatives derived from vasicinone as a lead compound and 3-[3-(piperidin-1-yl)-propyl]-3,4-dihydroquinazoline-4-one and 4-[3-(piperidin-1-yl)-propylsulfanyl]-3,4-dihydroquinazoline-4-one, the most active derivatives from our previous work. The derivatives were subsequently tested on isolated rat trachea and their bronchodilatory activity was evaluated. Their toxicity, *in vivo* activity, mechanism of action and the relationships between structure and activity (SAR) were also investigated.

The second part deals with the synthesis of novel derivatives of 2,4-disubstituted quinazoline and their testing for affinity to nuclear constitutive androstane receptor (CAR). This work follows up on the previous random discovery that 2-(3-methoxyphenyl)quinazoline-4-ol is a promising CAR agonist which own activity comparable to that of the human agonist CITCO.