Universidad de Alcalá

NEW INHIBITOR COMPOUNDS OF THE TYROSINE PHOSPHATASE 1B PROTEIN

Patent
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Code

BIO_UAH_23

Application areas

- Biological Sciences, Health and Pharma

Type of Collaboration

- Technical cooperation
- License agreement
- Commercial agreement with technical assistance

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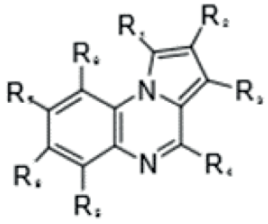
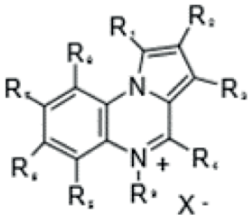


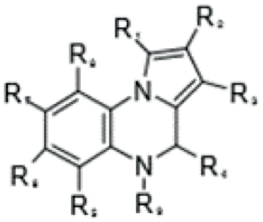
I

Fig. 1



II

Fig. 2



III

Fig. 3

Figure 1, 2 and 3.- View of the structure of new compounds of Formula I, Formula II and Formula III

ABSTRACT

The invention describes the presentation of three families of compounds with inhibitory activity on protein tyrosine phosphatase B1 (PTP1B). The new compounds of this invention have a structure of pyrroloquinoxaline and pyrroloquinoxalinium, never before used in the inhibition of PTP1B.

The present invention is related to the field of chemical synthesis of new compounds and their use as inhibitors of PTP1B, which are useful in the treatment or prevention of diseases in which PTP1B is known to be involved in the pathogenesis

As inhibitors of phosphatase activity and, in particular, as inhibitors of PTP1B, the novel compounds of the present invention can be used for the treatment of insulin resistance, glucose intolerance, obesity, diabetes mellitus, hypertension and ischemic diseases of large and small blood vessels, conditions that accompany type 2 diabetes including dyslipidemia, for example, hyperlipidemia and hypertriglyceridemia, atherosclerosis, vascular restenosis, irritable bowel syndrome, pancreatitis, adipose cell cancer and carcinomas such as liposarcoma, and other disorders where insulin resistance is indicated. In addition, the compounds of the present invention can be used for the treatment of cancer, osteoporosis, neurodegenerative and infectious diseases, and diseases involved with inflammation and the immune system.

ADVANTAGES AND INNOVATIONS

The formulas described in the invention represent a novelty in terms of the inhibition of PTP1B, since they are sufficiently lipophilic allosteric inhibitors, that represents an advantage over the active center inhibitors discovered before, which show a very low bioavailability and which failed in clinical trials.

It presents commercial potential at an international level, focused mainly on the markets of the US, Europe, Australia, Japan and India with reasonable difficulty and cost of implementation.