

NOVEL POTASSIUM CHANNEL DRUGS AND THEIR USES

ABSTRACT OF THE DISCLOSURE

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This invention relates to novel multibinding compounds that bind to potassium (K^+) channels and modulate their activity. The compounds of this invention comprise 2-10 K^+ channel ligands covalently connected by a linker or linkers, wherein the ligands in their monovalent (i.e., unlinked) state bind to and are capable of modulating the activity of one or more types of K^+ channel. The manner of linking the ligands together is such that the multibinding agents thus formed demonstrate an increased biologic and/or therapeutic effect as compared to the same number of unlinked ligands made available for binding to the K^+ channel. The invention also relates to methods of using such compounds and to methods of preparing them. The compounds of this invention are particularly useful for treating diseases and conditions of mammals that are mediated by K^+ channels. Accordingly, this invention also relates to pharmaceutical compositions comprising a pharmaceutically acceptable excipient and an effective amount of a compound of this invention.

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Figure 4