

Structure activity relationship analysis of a novel necroptosis inhibitor, Necrostatin-5

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Technology description

A new paradigm in cell death has been discovered, Necroptosis. Necroptosis reflects a distinct mechanistic pattern of programmed cell death that combines elements of passive unregulated necrosis and organized, energy-dependent apoptosis. Activated by the TNF family, sterols, and toll-like receptors via the RIP1 regulator, Necroptosis has been implicated in ischemic events such as myocardial infarctions and retinal ischemia. Diseases characterized by Necroptosis also include solid organ failure and stroke. Over ten classes of Necroptosis inhibiting compounds have been identified. An opportunity to develop a platform of Necroptosis inhibitors for the treatment of a range of indications is available for licensing.

Advantages

Their mechanism of action involves inhibition of RIP1 protein kinase while sparing the normal apoptotic pathways. Medicinal chemistry and lead optimization have been performed, with data supporting future development of a lead compound for treatment in retinal ischemia.

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