



Antagonists against Anti-apoptotic Bcl-2 Proteins for Cancer Treatment

HA 14-1 is a qualified antagonist against anti-apoptotic Bcl-2 proteins that are believed to be one of the major contributors to the observed drug resistance in cancer therapy.

However, due to its poor stability and the reactive oxygen species (ROS) generated by its decomposition, chemical modification of HA 14-1 is desired.

An analogue of HA 14-1- sHA 14-1 has been developed at the University of Minnesota that has been found to be more stable than HA 14-1 and did not induce ROS generation. It also demonstrated improved binding interaction with anti-apoptotic Bcl-2 proteins compared to HA 14-1 and displayed similar in vitro cytotoxicity as HA 14-1.

sHA 14-1 is insensitive to the drug resistance induced by anti-apoptotic Bcl-2 proteins. It also synergizes the anti-cancer activities of both intrinsic

and extrinsic apoptotic stimuli, further underscoring the potential of sHA 14-1 in cancer therapy.

Features & Benefits

- Promising candidate for the treatment of drug-resistant cancers either as a monotherapy or in combination with current cancer therapies.
- The molecule shows improved stability under physiological conditions compared to HA 14-1 and does not induce ROS generation.
- Shares the advantages of HA 14-1 in the treatment of cancer.
- Improved binding interaction with anti-apoptotic Bcl-2 proteins compared to HA 14-1
- Similar in vitro cytotoxicity as HA 14-1
- Synthesis has been accomplished and in vitro/in vivo studies are ongoing.

Technology Status

HA14-1 analogues have been synthesized and tested for stability. In vitro binding assays have identified optimum structures and in vivo murine studies are ongoing.

IP Status

Patent Pending

Primary Inventor

Chengguo Xing, Ph.D
Department of Medicinal Chemistry

Related publications: Cancer Letters 259 (2008) 198-208.

Questions? Contact:

Sue Patow,
Technology Marketing Manager

Ph 612.624.3966
E-mail patow001@umn.edu

UM Docket Z07120

Learn about more groundbreaking discoveries at www.research.umn.edu/techcomm

