AzTE Arizona Technology Enterprises

www.azte.com

Cribrostatin 6

AzTE Case # M02-029

Inventors

George Robert Pettit
Regents Professor
Department of Chemistry
and Biochemistry
Arizona State University

John Knight

Invention Description

ASU researchers began to investigate the blue sponge *Cribrochalina* sp. in 1986. From this species they successively isolated Cribrostatins 1 to 5 compounds. Cribrostatins 3 and 5 disclosed high potency against a minipanel of human cancer cell lines (Mean panel GI_{50} values of 4.27×10^{-6}M and 5.01×10^{-6}M respectively) and Cribrostatins 2 and 4 had broad antimicrobial spectra.

Eventually Cribrostatin 6 has been isolated from the same sponge, and its structure elucidated. When tested against a panel of human cancer cell lines, Cribrostatin 6 exhibited significant cancer cell growth inhibition (GI_{50} of 0.21 µg/mL against BXPC-3 cell line (pancreas adenocarcinoma), GI_{50} of 0.24 µg/mL against MCF-7 cell line (breast adenocarcinoma), GI_{50} of 0.38 µg/mL against DU-145 cell line (prostate)).

But Cribrostatin 6 also exhibited antimicrobial activity against 15 antibiotic-resistant Gram-positive bacteria and pathogenic fungi (inhibitory concentration from 0.5 µg/mL) and against the Gram-negative bacterium *Neisseria gonorrhoeae* (inhibitory concentration of 0.0625 µg/mL).

Thus, Cribrostatin 6 is a small compound combining outstanding antineoplasic, antibiotic and antifungal activities.

Potential Applications

The new compound has applications as:

- **Anti-neoplasic and anti-cancer therapeutic agents**
- **Antibacterial and antifungal agents**

Benefits and Advantages

- **Diversity** – Cribrostatin 6 presents a broad range of potential applications.
- **Synthesis** – Synthesis of Cribrostatin 6 has been performed, and is described in literature.

Intellectual Property Status:

U.S. Patent 7,317,020

Contact

Thomas Goodman, PhD

Director

Business Development, Life Sciences

Arizona Technology Enterprises, LLC (AzTE)

P: 480.884.1648

F: 480.884.1984

TOMGOODMAN@AZTE.COM

HEALTHSCIENCES@AZTE.COM