



## Cribrostatin 6

AzTE Case # M2-026

### Inventors

#### **George Pettit, PhD**

Regents Professor  
Department of Chemistry  
and Biochemistry  
Arizona State University

#### **John Knight, PhD**

### Intellectual Property Status:

U.S. Patent 7,317,020

### Contact

Yash Vaishnav, PhD, MBA

Vice President

Business Development, Life Sciences

Arizona Technology Enterprises, LLC (AzTE)

P: 480.884.1648

F: 847.971.2871

[YASH@AZTE.COM](mailto:YASH@AZTE.COM)

[HEALTHSCIENCES@AZTE.COM](mailto:HEALTHSCIENCES@AZTE.COM)

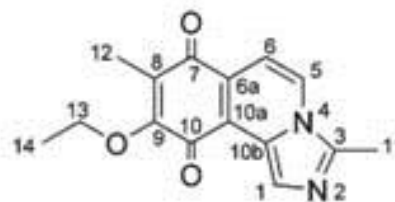
### Invention Description

ASU researchers began to investigate the blue sponge *Cribrochalina* sp. in 1986. From this species they successively isolated Cribrostatis 1 to 5 compounds. Cribrostatis 3 and 5 disclosed high potency against a minipanel of human cancer cell lines (Mean panel GI50 values of  $4.27 \times 10^{-6}$ M and  $5.01 \times 10^{-6}$ M respectively) and Cribrostatis 2 and 4 had broad antimicrobial spectra.

Eventually Cribrostatin 6 was 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 (GI50 of 0.21  $\mu$ g/mL against BXP-3 cell line (pancreas adenocarcinoma), GI50 of 0.24  $\mu$ g/mL against MCF-7 cell line (breast adenocarcinoma), GI50 of 0.38  $\mu$ g/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  $\mu$ g/mL) and against the Gram-negative bacterium *Neisseria gonorrhoeae* (Inhibitory concentration of 0.0625  $\mu$ g/mL).

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



Cribrostatin 6

### Potential Applications

The new compound has applications as:

- **Anti-neoplastic 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