

## **Sponges from North Borneo and their bioactivity against human colorectal cancer cells**

### **ABSTRACT**

Sponges are major source of numerous cytotoxic compounds that are used for defence as well as adaptation to the environment. Numerous studies have discovered compounds from sponge extracts that were effective against a wide range of cancer cells. In this study, a total of 23 sponges comprising of 19 species were collected from Northeast Borneo. Sponges were treated and extracted using modified Folch extraction method, followed by cytotoxicity assay to determine their effectiveness against different colorectal cancer cells. Our results demonstrate that *Monanchora clathrata*, *Dysidea* sp., and *Jaspis* sp. possess different degrees of cytotoxicity against a wide range of human colorectal cancer cells. *Monanchora clathrata* (KDT07), *Dysidea* sp. (KDT09), and *Jaspis* sp. (KDT18) are among the demosponges which possess significant cytotoxicity against colorectal cancer cell lines, including HCT116, LoVo, SW480, and SW620. KDT08 and KDT21 which fall under the same genus *Dysidea*, possess insignificant cytotoxicity against colorectal cancer cells suggested environmental factors (symbiotic organisms) play a role in biosynthesizing bioactive compounds. Presented results suggested the importance of intensifying research on isolating and purifying natural products from marine sponges for useful applications.