

# Synthesised sponge chemical shows promise for cancer

February 7 2014

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A promising compound for cancer treatment has been synthesised in a laboratory by an RMIT University researcher conducting PhD research.

Dr Dan Balan, from the School of Applied Sciences at RMIT, said 15-aza-Salicylihalamide A analogue had demonstrated potent activity against several leukaemia cell lines.

"Salicylihalamide A is an interesting natural marine product that has been isolated from a marine sponge of the genus *Haliclona*, collected from waters around Rottnest Island, 18 km off the coast of southern Western Australia," Dr Balan said.

Salicylihalamide A is cytotoxic – or a toxin which is known to destroy cells and which also provides a defence for the sea sponge.

"My goal was to synthesise the chemical in the laboratory in the form of a single *aza*-salicylihalamide A analogue molecule," he said.

The *aza*-salicylihalamide A analogue molecules were then exposed to NCI-60 leukaemia cell lines, and exhibited antiproliferating effects on the group of cells at highly diluted, or 'sub-molar,' concentrations.

"15-aza-Salicylihalamide A Analogue has proven to be very active against various types of [cancer](#), but it was clearly most active against HL-60, which is acute promyelocytic leukaemia," he said.

Other findings revealed it to be an inhibitor of vacuolar ATPase and proton pumps, frequently found in metastatic cancer [cells](#) – which are [cancer cells](#) that have migrated through the bloodstream from more advanced tumours.

"The molecule was synthesised in a short molecular sequence that could be easily produced in very large volumes for drug production," Dr Balan said.

He explained there will be further research to investigate its effectiveness on different cancers, potentially leading to extensive drug development.

Provided by RMIT University

Citation: Synthesised sponge chemical shows promise for cancer (2014, February 7) retrieved 7 May 2024 from <https://medicalxpress.com/news/2014-02-synthesised-sponge-chemical-cancer.html>

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