Soldier beetle’s genes may hold key for synthesizing antibiotic, anti-cancer chemicals

New antibiotic and anti-cancer chemicals may one day be synthesised using biotechnology, following CSIRO’s discovery of the three genes that combine to provide soldier beetles with their potent predator defence system.

Soldier beetles exude a white viscous fluid from their glands to repel potential attacks from predators, as well as in a wax form to protect against infection. The team found this fluid contains an exotic fatty acid called dihydromatricaria acid, or DHMA, which is one of a group called polyynes that have known anti-microbial and anti-cancer properties.

While DHMA and similar polyyne fatty acids are found in a wide variety of plants, fungi, liverworts, mosses, marine sponges and algae, these compounds have proved very difficult to manufacture using conventional chemical processes. However, Dr Haritos and her team have developed a way to achieve this. “We have outlined a method for reproducing these polyyne chemicals in living organisms like yeast, using mild conditions” Dr Haritos said.

View the original article here: Gene discovery turns soldier beetle defence into biotech opportunity