

**HEAVY METAL CONTENTS AND ANTI BREAST CANCER
POTENTIAL OF GIANT MOTTLED EEL OIL (*Anguilla
marmorata* Quoy & Gaimard, 1824)**

BIOLOGY UNDERGRADUATE THESIS



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PADANG, 2022**

ABSTRACT

Giant mottled eel oil (*Anguilla marmorata*) contains higher levels of omega-3 PUFAs (EPA and DHA) than the others Anguillid species. Omega-3 fatty acids contained in fish oil can affect the growth of cancer cells by changing the membrane structure, affecting the cell cycle and inducing apoptosis. Although giant mottled eel oil can act as an anti-cancer drug, the current high pollution of the aquatic environment causes the accumulation of heavy metals in the fat and lipids of *Anguilla marmorata* through the food chain. Therefore, it is necessary to conduct this research with the aim of knowing the oil safety of giant mottled eel (*A. marmorata*) used in this study based on the heavy metal contents and to get information about the potential of giant mottled eel oil (*A. marmorata*) as an anti breast cancer. The content of heavy metals was measured using atomic absorption spectrometry (AAS) and the potency of giant mottled eel oil on the viability of T47D cells was tested by using MTT assay method. The results of this study showed that the giant mottled eel oil is safe for consumption because the content of heavy metals (Hg, Pb, Cd, As and Ni) < 0.100 mg/kg and giant mottled eel oil was tested on T47D cells has a potency as chemoprevention agent with an IC₅₀ value is 402.677 µg/ml (moderate cytotoxic).

Keyword: Breast cancer, Cytotoxicity, Heavy metals, MTT test, T47D cells.

