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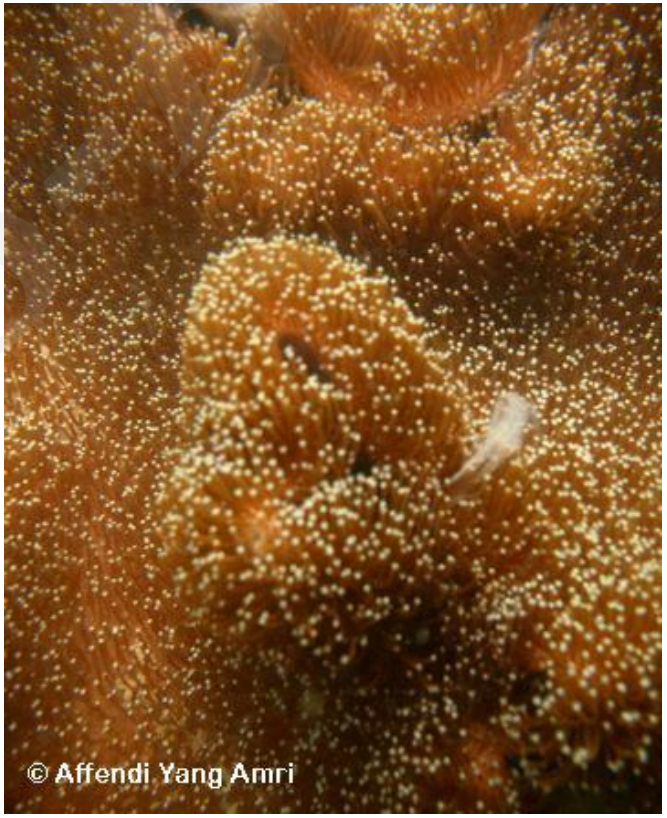
Purification and identification of novel cytotoxic oligopeptides from soft coral *Sarcophyton glaucum*

Key words: Anticancer therapy, Bioactive peptides, Cytotoxicity, HeLa cells, *Sarcophyton glaucum*, Soft coral

Research Summary

This study aimed to purify and identify cytotoxic peptides from soft coral *Sarcophyton glaucum.*

S. glaucum exposed on a reef flat during low tide



Close-up of *S. glaucum* underwater

Research Summary

S. glaucum

Hydrolysis

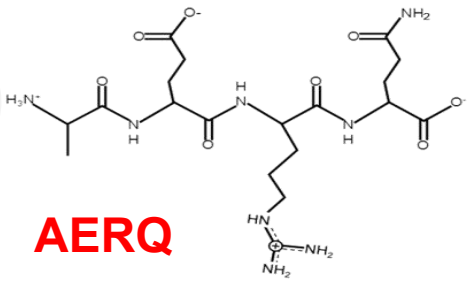
Papain hydrolysate

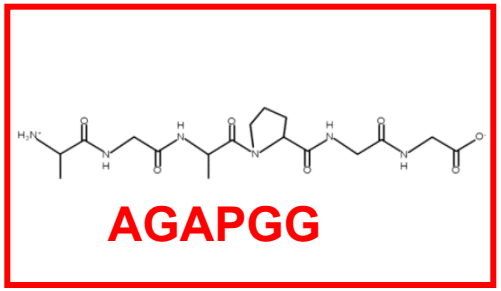
Guided by MTT cytotoxicity assay

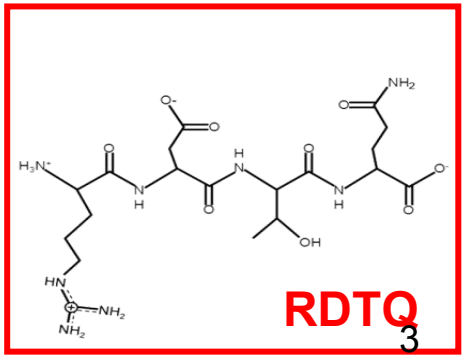
Purification by:

1. Membrane Ultrafiltration
2. Gel filtration chromatography
3. Solid phase extraction and RP-HPLC

Cytotoxic peptides identified:







Innovation points

- **Three novel cytotoxic peptides were identified:**

AGAPGG, AERQ and RDTQ

- **These peptides exhibited cytotoxicity on HeLa cells up to 5.8-fold stronger than anticancer drug 5-fluorouracil (5FU).**
- **The three peptides displayed low cytotoxicity on non-cancerous Hek293 cells.**