

# Cytotoxin Compounds for Cancer Treatment

**R**esearchers at the University of South Florida have extracted a compound from tunicates of the *Synoicum* species to treat various diseases such as skin, colon and renal cancer.

This year in the United States alone, over one million people will be diagnosed with cancer and more than half a million will die from the disease. Researchers are constantly searching for new ways to combat this deadly malady. Microorganisms have been found to produce innovative compounds recognized for their unique self-defense, aggression, and efficient communication properties. These same compounds play an important pharmacological role in antimicrobial, antifungal, antiparasitic and antitumor therapies. Microorganism associated compounds extracted from certain corals and sponges have been used to treat various diseases in humans. Furthermore, tunicates, which are another type of marine animal, have also been used as a source for harvesting these natural pharmacological products.

USF researchers have derived compounds from the tunicate *Synoicum adareanum* for cancer treatment. *Synoicum adareanum* is found in Antarctic waters and generally grows in colonies. These extracted compounds are known as Palmerolides, which are a form of polyketides. Polyketides are known anti-cancer compounds, making them economically, clinically and industrially sought after molecules. These Palmerolides have exhibited significant anti-cancer activity and are applicable treatment options for many cancer types including melanoma, colon, renal, breast, prostate, and stomach cancer.

### ADVANTAGES:

- Does not harm healthy cells
- Inhibits cancer cell growth
- Can treat many forms of cancer
- Active against 4 of 7 melanoma types

### *Compounds Derived from Antarctic Tunicates to Treat Cancer*



*The Antarctic Tunicate, Synoicum Adareanum*

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