



ANTI-INFLAMMATORY AND WOUND HEALING COMPOUNDS DERIVED FROM OR BASED UPON MARINE PSEUDOPTEROSINS

UC Case No. 1994-076, et al.

BACKGROUND: Gorgonians are a diverse group of soft corals which are commonly known as sea feathers, sea whips and sea fans. Pseudopterosin is formed by these organisms during photosyntheses. Researchers at UCSB, in partial collaboration with UC San Diego and others, have successfully isolated a variety of pseudopterosin compounds from these organisms that have demonstrated, significant anti-inflammatory and wound healing properties, and have developed non-animal synthetic derivatives of pseudopterosins. These compounds have demonstrated commercial value, as the original compounds, developed in the 1980s, have been successfully incorporated into cosmetics to inhibit inflammation experienced during mild allergic reactions.

DESCRIPTION: UCSB has developed a large patent portfolio around pseudopterosin compounds and their use as anti-inflammatories, analgesic agents, wound healing agents and burn treatments, including synthetic compounds to minimize the need for harvesting the marine organisms, including:

- *Ether Derivatives of Pseudopterosin* (UC Case 1994-076; U.S. Issued Patent 5,624,911): Patent covers novel synthetic ether derivatives of pseudopterosin that are effective anti-inflammatory and analgesic agents (including use for treating skin irritations or diseases).
- *Compounds and Methods of Use for Treatment of Neurogenic Inflammation*. (UC Case 1999-045; U.S. Issued Patent 6,291,501. Patent covers novel anti-inflammatory bis-heterocyclic compounds with anti-inflammatory properties, particularly to inhibiting neurogenic inflammatory responses.
- *Anti-Inflammatory Compounds Derived from Pseudopterogorgia Elisabethae*. (UC Case 2001-065; U.S. Issued Patent 6,787,571). Patent covers compounds isolated from the P. Elisabethae that may be used therapeutically to treat diseases or disorders related to inflammations, cell-proliferation or pain.
- *Pseudopterosin Compounds of Symbiodinium ssp Isolated from Pseudopterogorgia elisabethae*. (UC Case 2002-044; U.S. Published Application 20030104007). Patent application covers novel methods to obtain, isolate, purify and prepare pseudopterosin compounds, as well as compounds obtained through such method. The disclosed compounds are of non-animal origin, substantially free of animal impurities, or both.
- *Methods for Treating, Preventing or Inhibiting Injuries, Cell membrane Stabilization and Calcium Mobilization using Pseudopterosin Compounds*. (UC Case 2003-474; U.S. Published Application 20050026847). Novel method for preventing, inhibiting, decreasing or modulating phagocytosis in a cell by administering an effective amount of pseudopterosin compound to treat, among other things, diseases associated with calcium mobilization or cell injuries caused by physical trauma, radiation, chemicals or a combination thereof.

- *Use of Pseudopterosins for Promoting Wound Healing.* (UC Case 2005-039; U.S. Issued Patents 5,597,808 and 6,022,862). Methods to promote wound healing and the growth and proliferation of keratinocytes, fibroblasts and endothelial cells through treating wound with pseudopterosin compounds. Managed on behalf of a third party by UCSB. Multi-phase clinical trial data related to these patents is also available.
- *Methods and Compositions for Modulating Adenosine Receptor Activity.* (UC Case 2007-426; patent pending). Patent application covers a method of blocking neutrophil through the use of pseudopterosin to treat tissue inflammation, tissue healing and tissue burns.

APPLICATIONS:

- Therapeutics (as anti-inflammatory and burn treatment)
- Wound healing
- Personal Care (including over-the-counter treatments for rashes and other skin minor conditions)
- Cosmetics (to minimize allergic reactions)

This technology is available for licensing.

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