

The Opportunity

Extracts of deep-ocean bacteria as Nutraceuticals for Addition to Pet and/or Animal Feed

Technology

Marine microorganisms have been shown to produce a wide variety of chemical structures with a broad range of attributes and performance characteristics. These include enzymes, peptides, proteins, pigments, polysaccharides and fatty acids. Of particular interest for pet and/or animal feed are the fatty acids. Marine bacteria, particularly those from the deep ocean, contain a mixture of complex fatty acids within their cell walls. One fatty acid, 12-MTA (methyltetradecanoic acid), was identified as having anti-inflammatory properties. This fatty acid is an inhibitor of the 5-LOX (lipoxygenase) enzyme system that transforms essential fatty acids into leukotrienes that can be proinflammatory. Also 5-LOX inhibitors are one of the key areas of modern drug development with plans evolving to use the compounds in treatment of asthma, ulcerative colitis and arthritis. Examples of other fatty acids produced by marine bacteria include palmitoleic acid, stearic acid, eicosapentaenoic acid, and docosapentaenoic acid.

Potential Applications

Bacterial fatty acids can act as nonsteroidal growth promoting factors as well as exhibit anti-inflammatory and other pharmacological properties - suggesting possible uses as nutraceutical supplements in pet foods or animal feeds.

Magellan BioScience Advantage and Capabilities

Isolated proteins and fatty acids from renewable resource can be produced in fermentors using readily-available raw materials. MAGELLAN BIOSCIENCE can supply samples of extracts containing these materials for evaluation.

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Magellan BioScience Group, Inc.

4519 George Road, Suite 120

Tampa, Florida USA 33634

Tel: +1-813-884-3131 Fax: +1-813-884-5724

eMail: info@magellanbioscience.com

