



Hofseth BioCare
www.hofsethbiocare.com

Sustainable marine nutrition and new medicine

Hofseth BioCare is transforming marine raw materials into products to improve worldwide health conditions including treatments for gastrointestinal diseases, respiratory disorders and cardiovascular health.

Fish has been an essential part of the human diet for hundreds of thousands of years, and today the health benefits of fish-derived products are widely recognized. Hofseth BioCare (HBC) is dedicated to bringing consumers and patients the highest quality nutritional supplements and innovative medicines from Atlantic salmon in a truly sustainable fashion.

HBC's products start with offcuts generated by Hofseth International, one of the largest sustainable processors of Atlantic salmon in the world. HBC has developed a unique, proprietary enzymatic hydrolysis process that cleaves fish protein into peptides and enables the oil and bones to separate off, totally unprocessed. These form the basis of the four currently marketed products: OmeGo, fresh, unrefined salmon oil; ProGo, a salmon protein hydrolysate of bioactive peptides; CalGo, collagen-calcium bone powder; and CollaGo, a soluble mix of type I and III collagen. This is all achieved at low temperatures to retain all the natural benefits of the individual elements.

HBC, best known as a consumer health company, also has a wide-ranging preclinical and clinical R&D program, and has established research partnerships with leading academic institutions to study HBC's products in gastrointestinal diseases, respiratory disorders, cardiovascular health, and many other disease indications, including COVID-19 (Fig. 1).

ProGo outperforms

ProGo contains bioactive peptides that have shown benefit for patients with iron deficiency anemia (IDA), which is currently limited to dietary modification, or iron supplements as tablets or injections that command a \$3 billion market globally and more than \$1 billion in the US alone. In a 6-week study, 16 g ProGo once a day in IDA patients outperformed whey protein and produced a 140% increase in ferritin (restored to normal levels) and a 15% increase in hemoglobin (near normal levels) through the upregulation of the *FTH1* gene encoding the heavy subunit of ferritin. As HBC's bioactive peptides do not contain any iron, they are very well tolerated, with no gastrointestinal (GI) side effects. HBC has garnered six structure function claims in the US related to these health benefits, and the approval of qualified claims from Health Canada for the prevention of IDA and the provision of antioxidant benefits. The peptides do not contain antioxidants, instead benefit is derived from the peptides' positive interaction with the body with the upregulation of antioxidant systems.

ProGo's bioactive peptides are also being studied in models of necrotizing enterocolitis (NEC) and ulcerative colitis/inflammatory bowel disease (IBD). This work has been carried out under

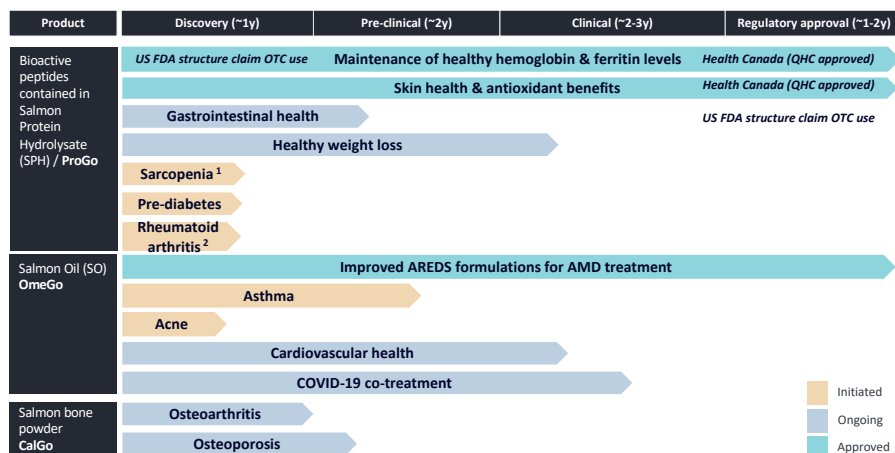


Fig. 1 | HBC's pre-clinical and clinical product pipeline. A range of products are under development to target gastrointestinal diseases, respiratory disorders, cardiovascular health, and other diseases—including COVID-19. (1) Age-related sarcopenia treatment; (2) Rheumatoid arthritis co-treatment. AMD, age-related macular degeneration; AREDS, age-related eye disease studies; OTC, over the counter; QHC, qualified health claims.

a partnership with Stanford University, which was renewed for 2 years in May 2020, and has shown that gene systems that protect the GI tract against oxidative stress and inflammation, including HMOX1, are upregulated in human GI cells by the bioactive peptides. HBC plans a pilot study to assess the peptides as a treatment for maintaining disease remission in people with mild to moderate ulcerative colitis. This is expected to commence in 2021.

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Targeting respiratory diseases

OmeGo contains the full spectrum of Omega-3s, and provides all the anti-inflammatory and antioxidant benefits of fresh fish. As such it's a natural product for promoting cardiovascular health, and preclinical and clinical studies have shown that a lipid fraction within OmeGo reduces 'bad cholesterol' significantly more than seen with other fish oils, sunflower oil and algae oil.

OmeGo is being evaluated for steroid-resistant asthma, which is frequently driven by over-active eosinophils. HBC has identified a minor lipid-soluble

element in OmeGo that modulates human eosinophil effector function in vitro, as well as in animal models, markedly better than processed salmon oil. Preclinical studies in asthma are almost complete, and human trials are expected to begin in 2021.

The potential benefits OmeGo offers for lung function has prompted HBC to investigate whether it can help manage respiratory problems caused by COVID-19 in both hospitalised and non-hospitalised patients. In June this year, Health Canada approved an accelerated phase 2/3 trial of OmeGo for the prevention of acute respiratory distress syndrome caused by infection with the SARS-CoV-2 virus. The primary endpoint is number of days spent on assisted respiration, and interim results from this ongoing multi-center trial are expected before the end of 2020. If supportive data is delivered, the trial will be scaled to a full phase 3.

Carefully chosen collaborations and partnerships have been key to revealing the full potential of HBC's products, and the company is keen to explore new opportunities to work with biopharma companies and academic institutes with expertise in relevant diseases.

CONTACT

Crawford Currie, Medical R&D & Investor Relations
Hofseth BioCare
Ålesund, Norway
Tel: +44 7968 195497
Email: cc@hofsethbiocare.no