



Is Salmon Protein the new 'Omega-3' ?

Marine Ingredients Conference
September 2013 Oslo

Hofseth Biocare ASA

A Company built on a sustainable concept

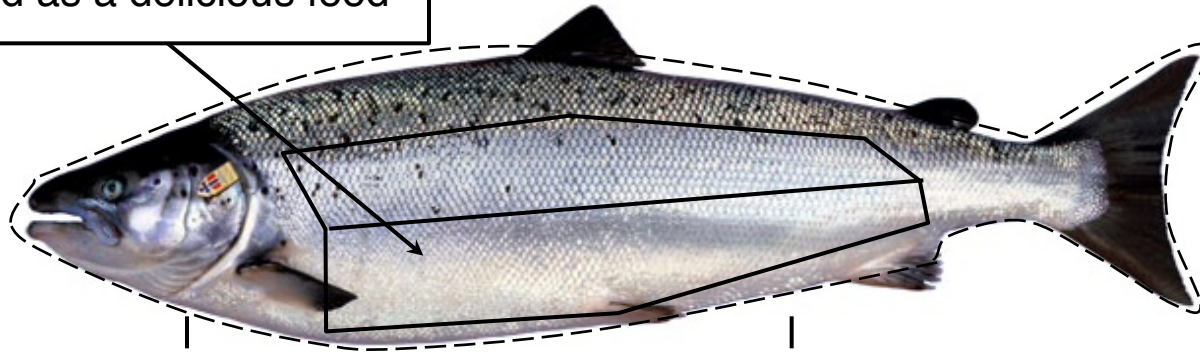
Norway makes the finest fish fillets in the world.

- But what happens to the rest of the fish?



Converting the whole salmon into food for human consumption

Fillets are used as a delicious food



Offcuts are the raw material used by HBC to produce premium biomarine ingredients for human applications

omeGo



Omega-3 free of contaminants & containing total lipid biofactors

proGo



Protein that is clean, concentrated & easily digestible with unique bioefficacy

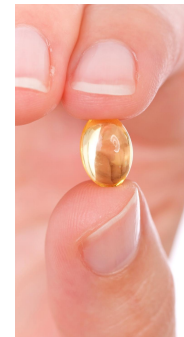
calGo



Natural Calcium which is more bio-available and increases bone density

HBC's Unique Process

- Intellectual Property
 - Patented and trade secret enzymatic hydrolysis process
- Gentle
 - No cooking, boiling or crushing
 - Minimized oxidation
 - Bioactive compounds are preserved
 - Eco-friendly
- Rapid with minimum autolytic degradation
 - From fillet to salmon products in 24 hours
- Three Pure Fraction Products
 - omeGo, proGo and calGo
 - all preserving the natural bioactive elements of fresh whole salmon

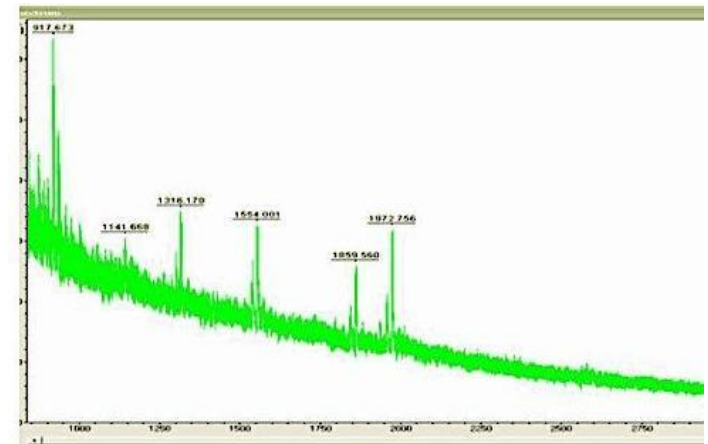
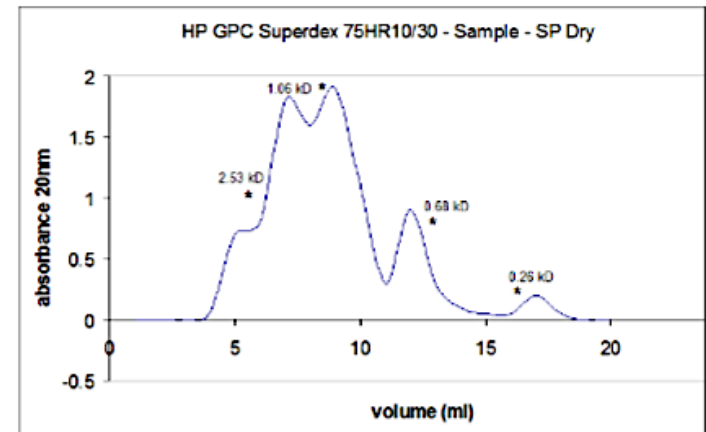


proGo – a new soluble protein hydrolysate for the human market

Physical Properties of proGo



- Makes a solution in water at 3% w/w
- Consistent narrow range of molecular weight distribution
- Hypoallergenic classification (MALDI-TOF analysis)
- Good blend of essential amino acids
- Low fish taste and bitterness
- Non-gelling powder for easy formulation



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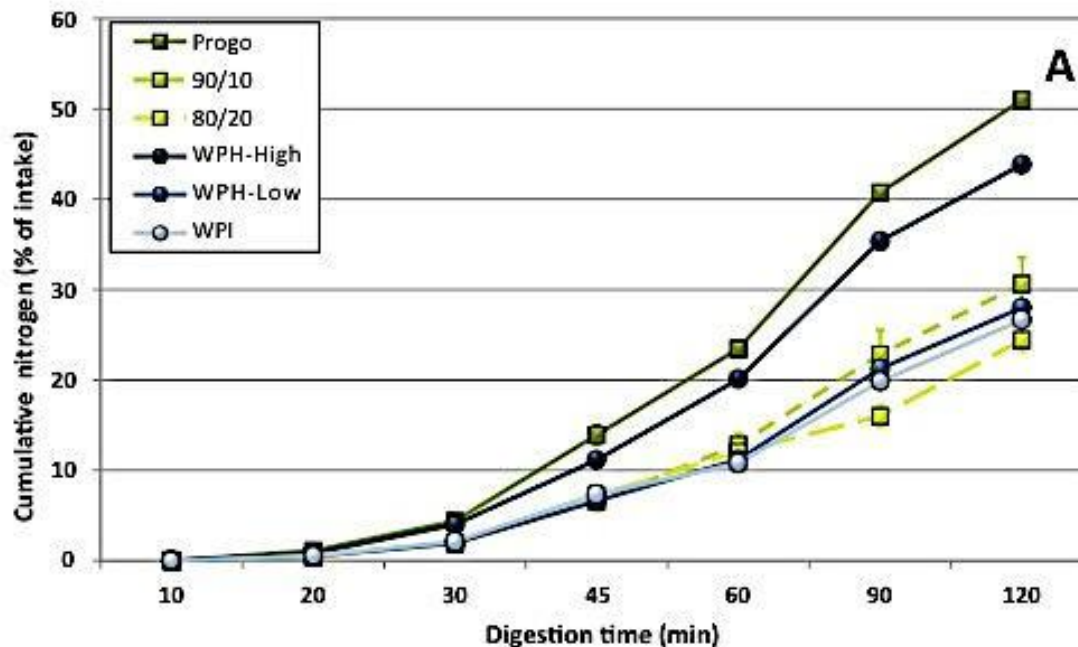
Health Properties of ProGo

- Fastest uptake of any protein powder tested (*TIM-1 trial at Laval University*) leading to improved muscle recovery
- Increased hemoglobin in anemic human subjects
- Increased energy and metabolism
- Potential gut anti-inflammatory effect

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TIM-1 Result Summary

- Progo™ showed higher nitrogen absorption than whey protein isolate (+79%)
- whey protein weakly hydrolyzed (+74%)
- and whey protein extensively hydrolyzed (+20%).



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Hemoglobin Human Trial

- Progo™ showed statistically significant increase in hemoglobin levels (3%) at 4g/day dose for 15 days
- New trial with 20g/day dose and 6 weeks duration planned in 4Q 2013.

**CHANGES IN MEAN HEAMOGLOBIN LEVELS
AFTER TREATMENT**

Duration in Days	Mean Haemoglobin (gm/dl) (± SD) (N=10)
Baseline	11.32 ± 0.55
15	11.65 ± 0.67
30	11.58 ± 0.65
60	11.58 ± 0.45
Diff (Baseline- Day 15) (p value)	00.33 ± 0.51 (0.04)*
Diff (Baseline- Day 30) (p value)	00.26 ± 0.69 0.13 (NS)
Diff (Baseline- Day 60) (p value)	00.26 ± 0.51 (0.07)#

By Student 't' Test (one tailed)

*Significant

NS= Not Significant

Significant at P = 0.1

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SPH and Anti-inflammatory effect

- Bile acids are powerful regulators of metabolism
- Other researchers (Bergen) have also shown that increased bile acid production occurs in rats fed SPH
- In senior dogs fed proGo, a decrease in plasma levels of CRP and C3 reactive proteins (anti-inflammatory) was also observed

Hofseth
BioCare®



THANK YOU

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