



# NATURAL HEALTH PRODUCTS NZ SUPPLIER'S DAY

NOV 17, 2022

New Zealand is well placed to grow  
Krill oil exports

Asia presents a great opportunity

Tools to exploit the opportunity -  
Introducing some research and  
applications

**Did you know..**

**NZ is the 2<sup>nd</sup> largest Krill Oil  
manufacturing country globally?**

(2019 20%, 2020 25%, 2021 22% - GOED/AKER/NZ Stats)

**While NZ KO production is declining  
NZ is value adding more. (Capsules etc)**

**NZ is well placed to supply  
increasing Asian demand for KO  
products.**





# OUR STORY

Aker BioMarine was created back in 2006 from a strong belief in the **positive health effects of krill**. Today 16 years later, we are the world's leading supplier of krill largely because we take care of the ecosystem from which we harvest, keeping the wellbeing of the krill biomass and the Antarctic ecosystem our top priority.

SINCE 2006 WE HAVE  
INVESTED OVER **USD800M**  
TO UNLOCK THE  
POTENTIAL WITHIN KRILL



....and we have had a  
long association with  
manufacturing in NZ



# We are Aker BioMarine

– a biotech innovator and Antarctic krill-harvesting company, dedicated to improving human and planetary health



We are a **GLOBAL** krill harvesting company



On a **MISSION** to improve human and planetary health



**BIOTECH INNOVATOR** and **LEADING SCIENCE** expert



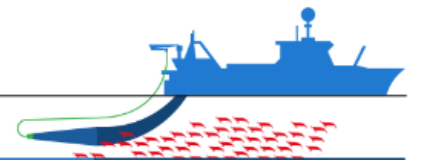
**SUSTAINABLE** and **TRACEABLE** operations



**PEOPLE** are the **HEART** of Aker BioMarine



Our **PRODUCTS** and **BRANDS**



**80%**

of global krill oil production

**69%**

krill catch

**65**

countries receive Aker BioMarine products

**2** ZERO HUNGER



**3** GOOD HEALTH AND WELL-BEING



**12** RESPONSIBLE CONSUMPTION AND PRODUCTION



**14** LIFE BELOW WATER



Published more than **60** studies researching and documenting the health benefits of marine phospholipids of omega-3s, choline and astaxanthin for human and animal health.

**1%**

precautionary krill quota in area 48

With close to **zero**

bycatch

**Full traceability** from catch to capsule

**50%**

reduction in CO<sub>2</sub>-emissions by 2030

Diversity in workforce from our fishermen to science team

**551** people

**40** nations

**40%** Women in Executive Management Team

Human health



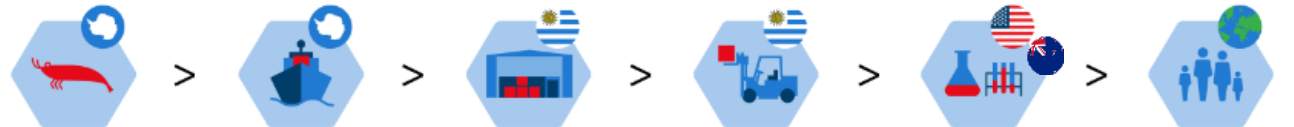
Animal health



Aquafeed



NEW areas





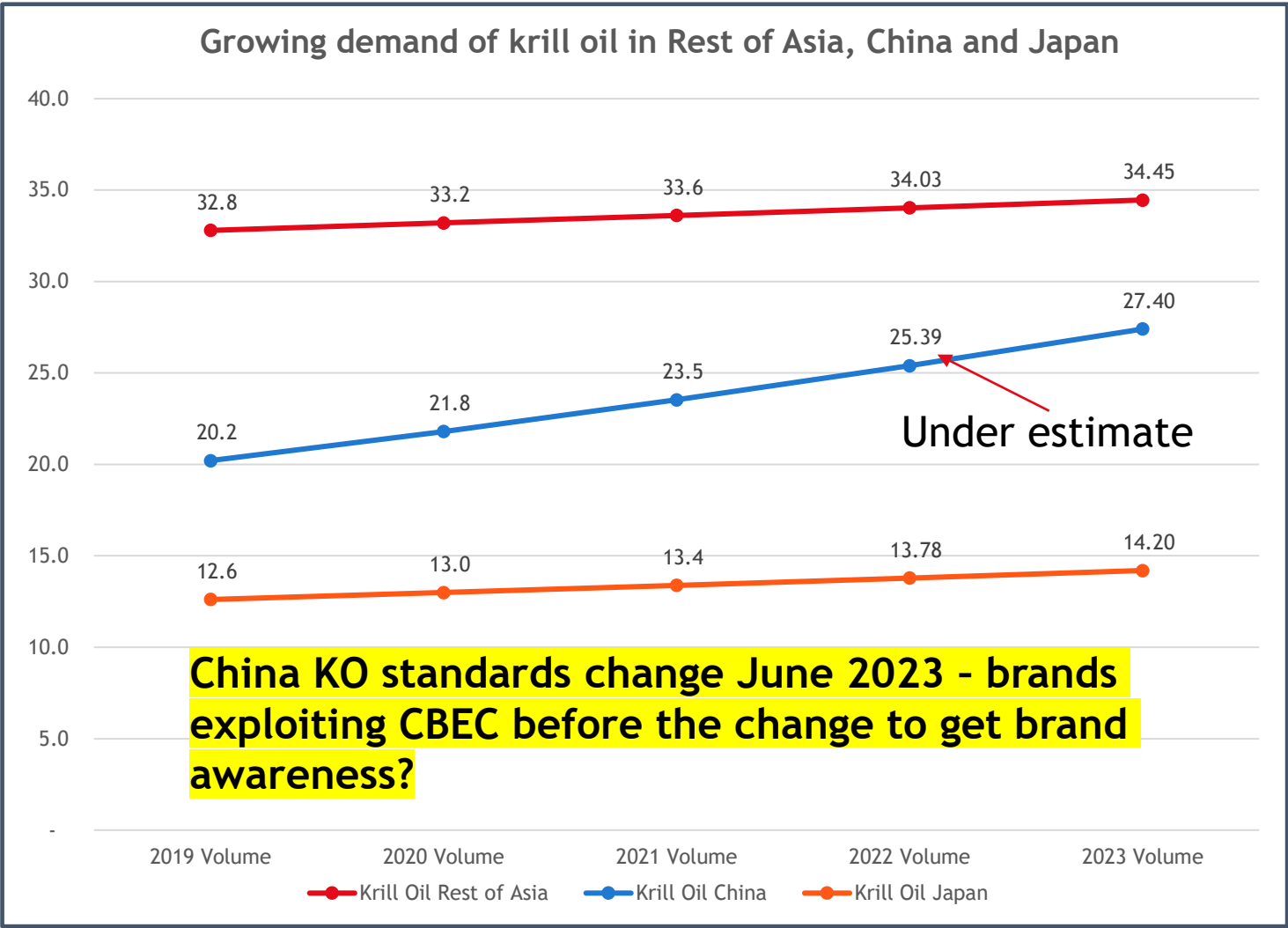
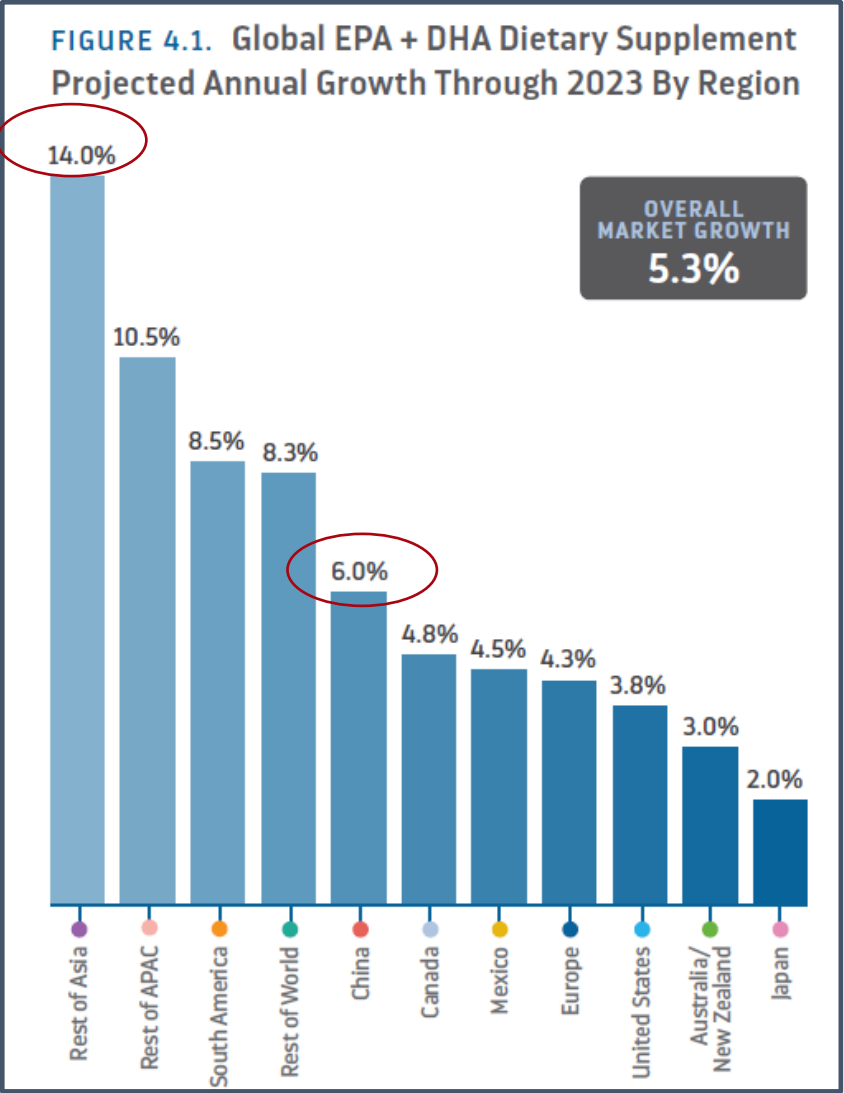


OPPORTUNITY

CAN NZ MEET THE  
GROWING DEMAND OF  
KRILL OIL IN ASIA?

# There is a growing demand of Omega-3's including Krill oil in Asia, China and Japan

(Source GOED 2022 Market report)



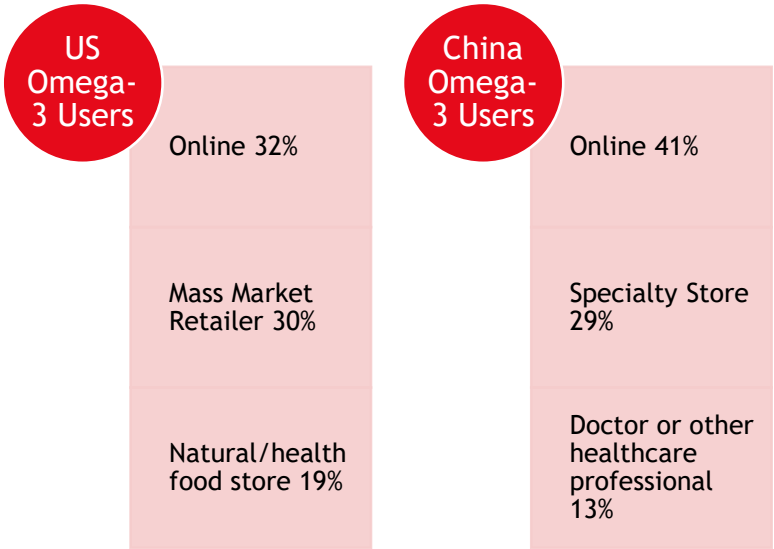


# Did you know that 41% of Omega-3’s are purchased online by Chinese consumers?

## Where Omega-3 Users Purchase Supplements

### KEY ITC INSIGHT:

- Online dominated as the channel preference in the US and China





# TOOLS TO EXPLOIT THE OPPORTUNITY

## 1. SCIENCE TO SUPPORT CLAIMS

### SUPERBA BOOST™ JOINT STUDY AND OTHER SCIENCE

# A 6 year collaboration set out to investigate the effects of Krill Oil in knee osteoarthritis and joint pain



**WINNER**  
**NUTRA**  
INGREDIENTS ASIA  
AWARDS 2022

**WINNER**  
INGREDIENT OF THE YEAR: HEALTHY AGEING

**WINNER**  
NUTRITION RESEARCH PROJECT

**Swisse**  
ULTIBOOST-  
**HIGH STRENGTH  
DEEP SEA KRILL OIL**  
SUSTAINABLY SOURCED KRILL OIL  
SUPPORTS HEART, BRAIN & EYE HEALTH  
EASILY ABSORBED  
1,000 mg  
BASED ON SCIENTIFIC EVIDENCE  
OMEGA-3  
60 CAPSULES

**SUPERBA Boost**  
Researched In  
Collaboration With  
**CSIRO**  
Australia's National  
Science Agency

**Effects of Swisse High Strength Deep Sea Krill Oil  
(Superba BOOST™) on adults suffering from mild to  
moderate osteoarthritis**  
Aker Biomarine; CSIRO; Swisse

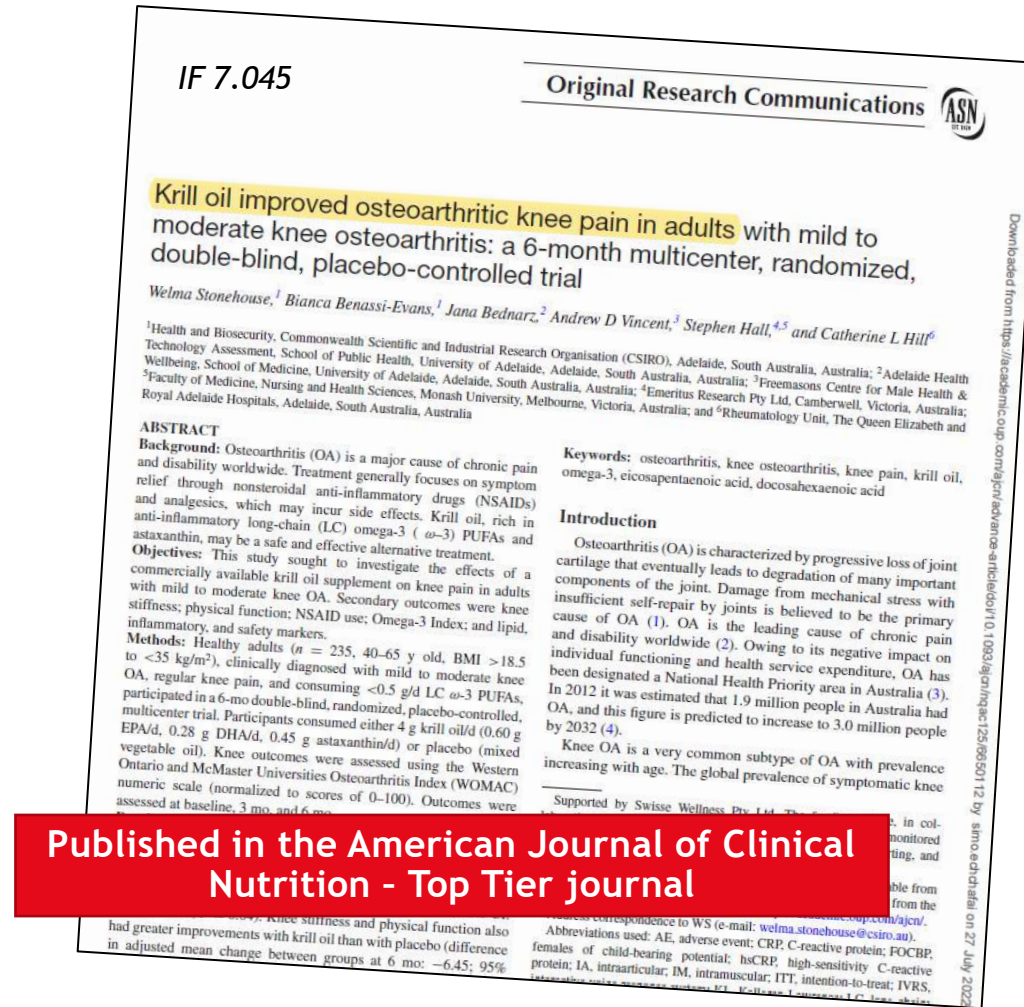
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# Breakthrough study demonstrates positive effects of Superba BOOST™ krill oil on osteoarthritis and joint health

- Randomized, Double-Blind, Placebo controlled, multi-centre trial
- Participants (n=235) with mild to moderate knee OA & regular knee pain
- 2 groups
  - Treatment group (Superba Boost)
    - EPA + DHA 880mg
  - Placebo group (Veg oil )
- Primary Endpoint: Change in knee pain at 3 and 6 months
  - Key secondary endpoints: Change in knee stiffness and physical function after 6 months.

Impact Factor	Number of Journals	Ranking (Top % of Journals)
10+	239	1.9%
9+	290	2.4%
8+	356	2.9%
7+	447	3.6%
6+	610	4.9%
5+	871	7.1%
4+	1,399	11.4%
3+	2,575	21%
2+	4,840	39.4%
1+	8,757	71.2%
0+	12,298	100%



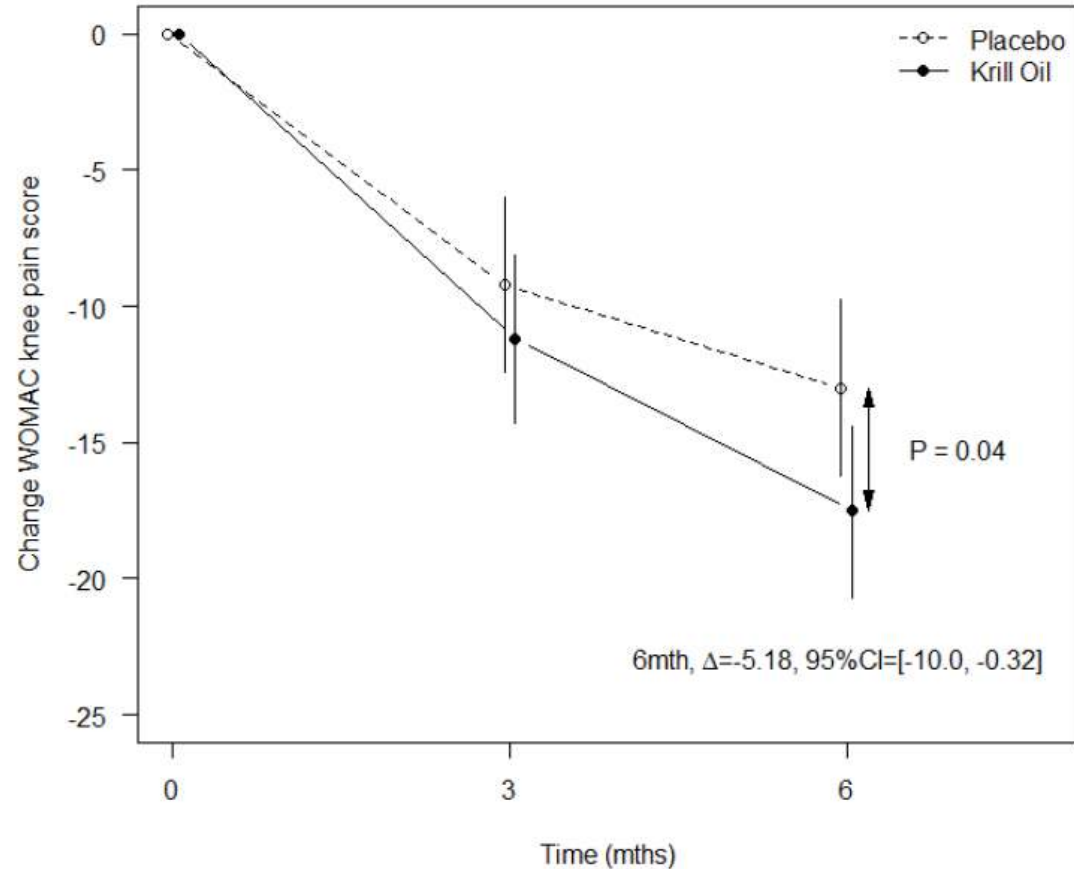
Product: Swisse High Strength Deep Sea Krill Oil (Superba BOOST™)

<https://academic.oup.com/ajcn/article/116/3/672/6650112?searchresult=1>

# Krill oil significantly reduced knee pain versus placebo over a 6-month period

## Key findings

- Knee pain significantly reduced in the krill oil group versus placebo over 6 month period

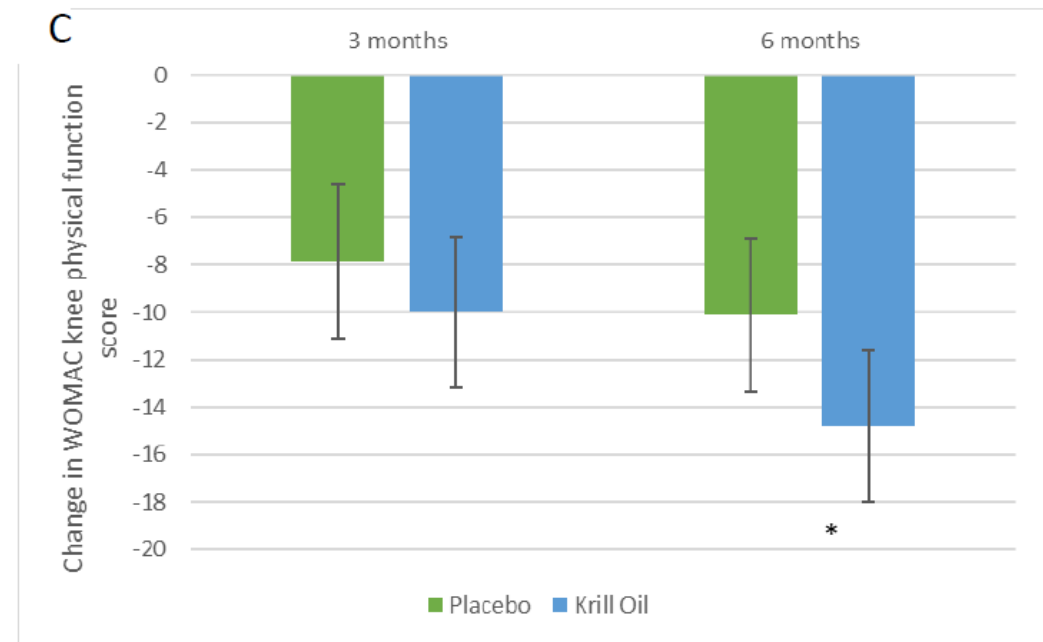
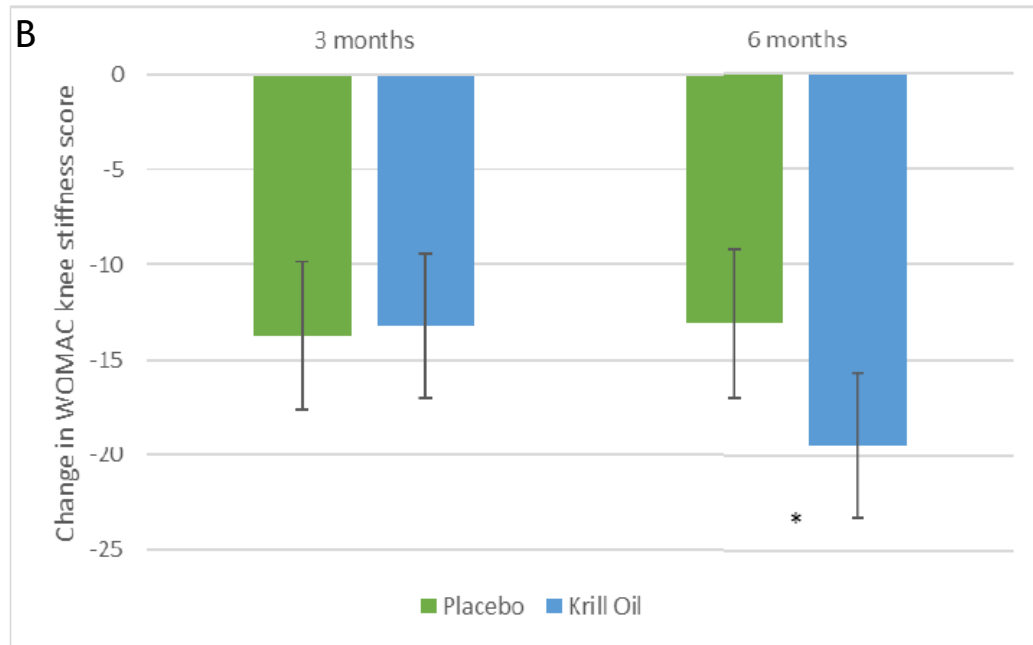


Mean [95% CI] changes in WOMAC knee pain score at baseline, 3 and 6 months. \*Sig. difference between krill oil group and placebo  $p=0.04$ .

Stonehouse et al, AJCN Jul 2022



# Krill oil significantly reduced knee stiffness and improved physical function over 6 months vs placebo



Results show beneficial effects of krill oil over *all measured knee parameters*

- very good across the board results

Adjusted mean [95% CI] changes from baseline in WOMAC knee outcome scores (B. Knee stiffness; C. Knee physical function). \*sig difference vs placebo  $p < 0.05$ .

# Studies support a range of doses for joint health in specific applications

From 1 capsule a day (500mg)

4+ grams per day



Health promotion

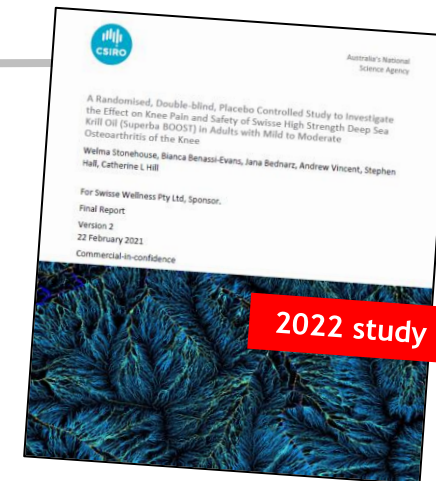
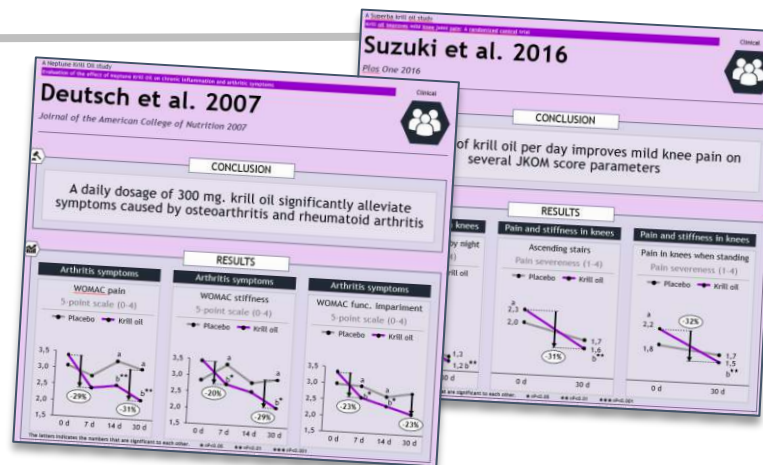
Lower dose

Longer time (years)

Risk reduction

Treatment

Higher dose

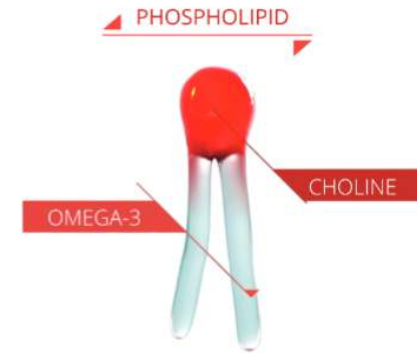






# Superba Krill benefits for human health are backed by science

Superba Krill supports overall health and wellness and is clinically proven to support various health conditions:



**50+** studies  
on krill oil proving  
significant benefits for  
human health

Aker BioMarine has  
made significant  
investments in R&D  
for nearly 20 years.



## GENERAL HEALTH & WELLNESS

- Increase the Omega-3 Index
- Improve the omega-6 to omega-3 ratio
- Increase the cell membrane fluidity
- Lower inflammatory markers
- Support immune function



- Berge et al 2015
- Ramprasath et al 2013
- Deutsch et al 2007



## HEART HEALTH

- Lower triglycerides levels in blood
- Increase the Omega-3 Index (an increase of this Index from 4% to 8% would reduce the risk of a coronary heart disease by about 30%\*)
- Reduce LDL cholesterol

- Mozaffarian et al 2022
- Rundblad et al 2018
- Cicero et al 2016
- Berge R et al 2015
- Ramprasath et al 2013
- Berge K. et al 2013
- Banni et al 2011
- Bunea et al. 2004
- Loraico et al 2015



## JOINT HEALTH

- Reduce knee pain
- Reduce knee stiffness
- Improve physical function
- Lower inflammatory status



- Stonehouse et al 2022
- Suzuki et al 2016
- Deutsch et al 2007



## LIVER HEALTH

- Support liver function
- Reduce fat accumulation
- Contribute to normal fat metabolism

- Gart et al 2021
- Mödinger et al 2019
- Rundblad et al 2018
- Cicero et al 2016
- Berge R et al 2015
- Ramprasath et al 2013
- Bunea et al 2004



## SKIN HEALTH

- Improve hydration, elasticity and water retention in the skin



- 3 clinical studies (Aker BioMarine proprietary data)



## COGNITIVE

- Activate cognitive function



- Konagai et al 2013



## SPORTS PERFORMANCE

- Support muscle functioning and strength
- Promote healthy recovery rate after workout
- Prepare your body for optimal sports performance

- Storsve et al 2022
- Burri et al. 2021
- Storsve et al. 2020
- Georges et al. 2018
- Da Boit et al. 2015
- Skarpanska et al 2010



## DRY EYE

- Combat symptoms of dry eyes such as inflammation, irritation and redness



- Deinema et al 2016



## PMS

- Relieve the emotional and physical symptoms related to premenstrual syndrome



- Sampalis et al 2003

*INTRODUCING*

# **A TOOL TO EXPLOIT THE OPPORTUNITY - Enhancing existing ingredients**



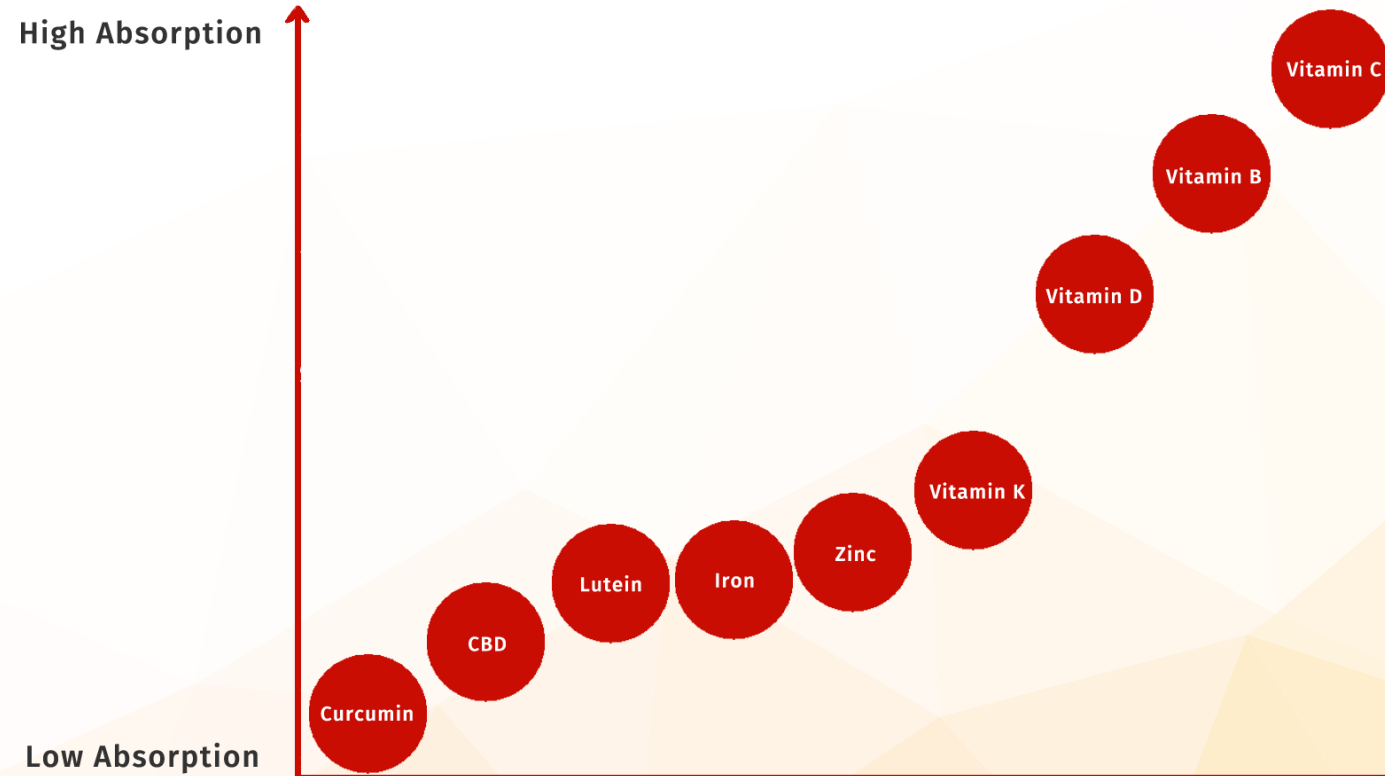
***AN ENHANCED DELIVERY  
PLATFORM FOR SUPPLEMENTS***



AKER BIOMARINE

# Bioavailability, absorption and supplements efficiency

- Bioavailability is the rate at which a substance is absorbed into the bloodstream and can be utilized by the body.
- Our bodies are made of 60% water, oil-based supplements resists absorption into the bloodstream.
  - Botanicals particularly struggle
- Many supplements end up being flushed from the body with limited efficacy.



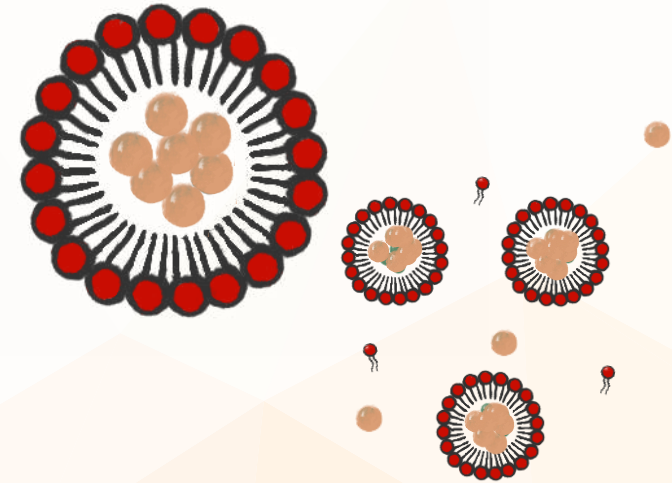


# Krill oil as a delivery system

- Phospholipids are an excellent delivery platform to improve absorption of lipophilic ingredients and utilization by the cells of these nutrients.



**Phospholipid molecule**



Curcumin is not water soluble  
Has low absorption  
Leading to limited health benefits

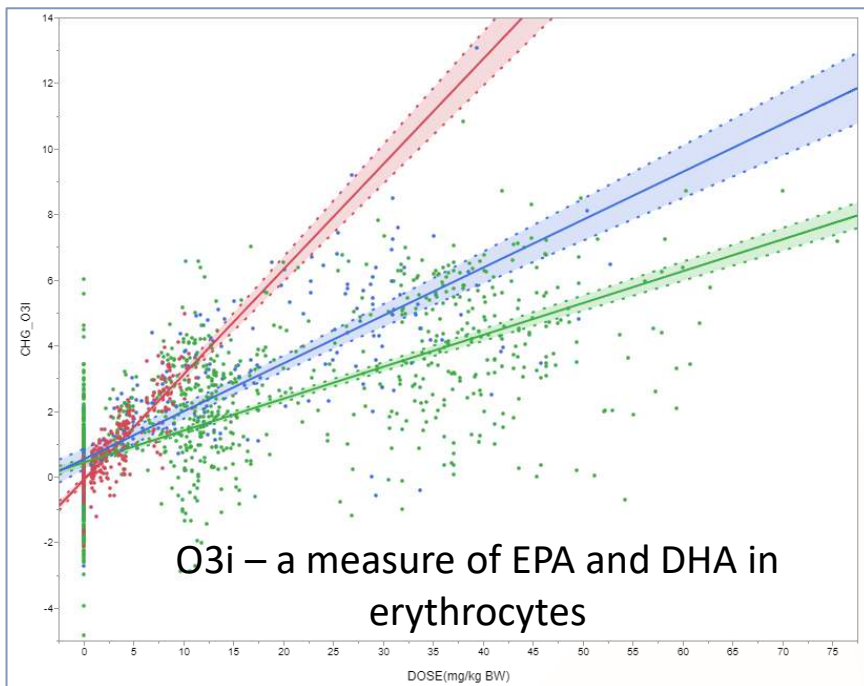
**Water & fat soluble**

Thanks to PL+ technology we create  
Curcumin micelles that are readily

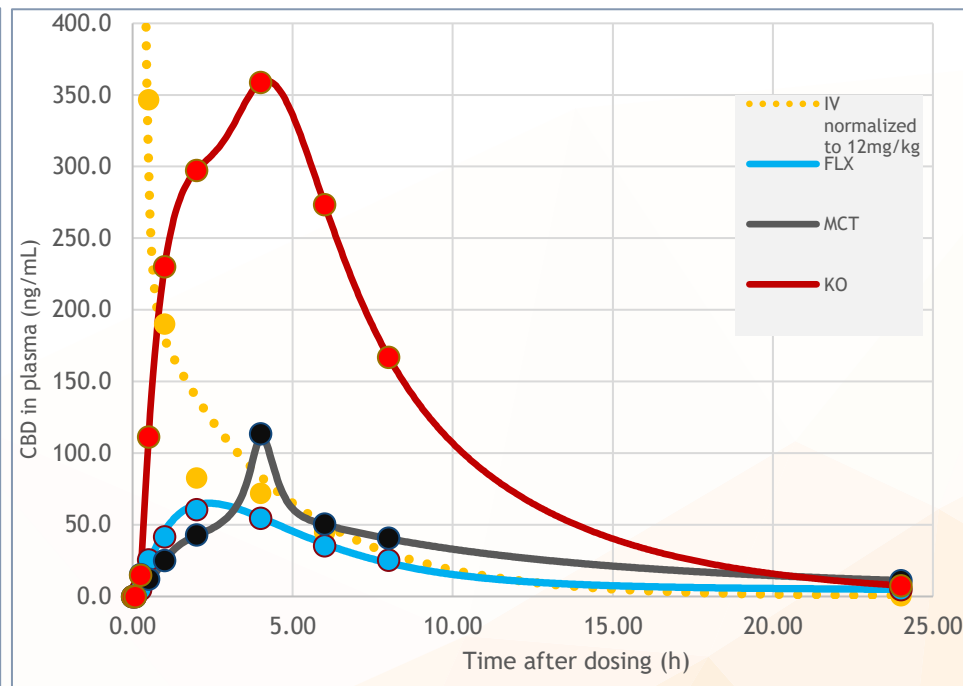


# Backed by proprietary science

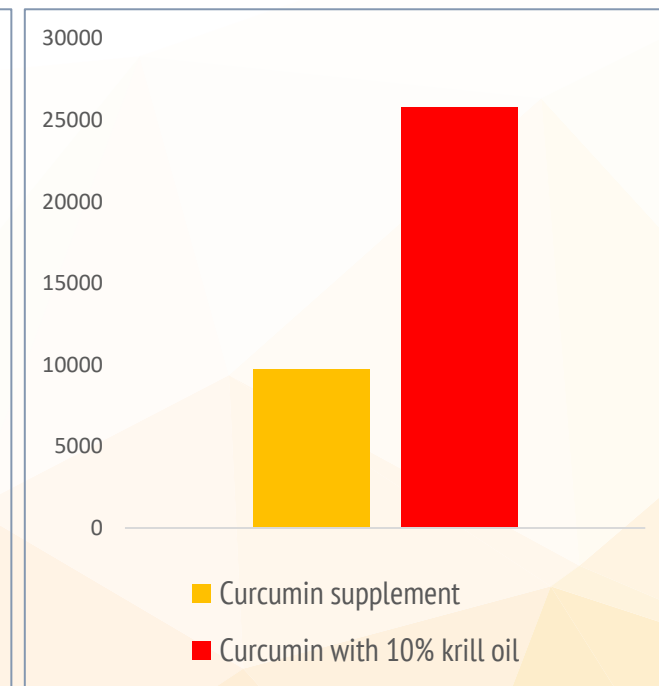
## Krill oil Vs EE Vs TG



## Krill oil & CBD



## Krill oil & curcumin





**WE'RE IN BUSINESS TO IMPROVE  
HUMAN AND PLANETARY HEALTH**



AKER BIOMARINE