Arctic Bioscience

Pioneers in the **natural resolution of inflammation**

Webcast October 16th 2024

ARCTIC BIOSCIENCE

Disclaimer

Matters discussed in this Presentation may constitute or include forward-looking statements. Forward-looking statements are statements that are not historical facts and may include, without limitation, any statements preceded by, followed by or including words such as “aims”, “anticipates”, “believes”, “can have”, “continues”, “could”, “estimates”, “expects”, “intends”, “likely”, “may”, “plans”, “forecasts”, “projects”, “should”, “target” “will”, “would” and words or expressions of similar meaning or the negative thereof. These forward-looking statements reflect the Company's beliefs, intentions and current expectations concerning, among other things, the Company's results of operations, financial condition, liquidity, prospects, growth and strategies. Forward-looking statements involve known and unknown risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. The forward-looking statements in this Presentation are based upon various assumptions, many of which are based, in turn, upon further assumptions that may not be accurate or technically correct, and their methodology may be forward-looking and speculative.

An investment in the Company's shares should be considered as a high-risk investment. Several factors could cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievement that may be expressed or implied by statements and information in this Presentation.

A multitude of factors can cause actual results to differ significantly from any anticipated development expressed or implied in this Presentation, including among others, economic and market conditions in the geographic areas and industries that are or will be major markets for Company's businesses, changes in governmental regulations, interest rates, fluctuations in currency exchange rates and such other factors.

The information obtained from third parties has been accurately reproduced and, as far as the Company is aware and able to ascertain from the information published by that third party, no facts have been omitted that would render the reproduced information to be inaccurate or misleading.

The contents of this Presentation are not to be construed as financial, legal, business, investment, tax or other professional advice. By receiving this Presentation, the Recipient acknowledges that it will be solely responsible for its own assessment of the Company, the market and the market position of the Company and that it will conduct its own analysis and is solely responsible for forming its own opinion of the potential future performance of the Company’s business. In making an investment decision, the Recipient must rely on its own examination of the Company, including the merits and risk involved. This Presentation is not an advertisement for the purposes of applicable measures implementing the EU Prospectus Regulation.

This Presentation is not a prospectus and does not contain the same level of information as a prospectus.

Note: For sources, references and additional context recipients of this presentation are referred to the Company Presentations found on Arctic Bioscience website, https://arctic-bioscience.com/investors/reports-presentations/

Summary

- The ongoing phase IIb-trial (HeROPA) is a 52-week trial with 521 patients recruited, studying efficacy and safety of the medical candidate HRO350 in mild-to-moderate psoriasis
- The primary endpoint (PASI50 at 26 weeks) was not met, mainly due to a higher than expected Placebo response
- Secondary endpoints at week 52 will be critical to understand the potential of HRO350 and the long-term efficacy in mild-to-moderate psoriasis

ARCTIC BIOSCIENCE

HRO350

Role in the resolution of inflammation in Psoriasis

Properties of drug candidate HRO350

HRO350 is a first in class asset with phospholipid esters as API

HRO350 is a unique lipid matrix with biologically active phospholipids

API: PEHeRo (Phospholipid Esters from Herring Roe)
IRIS Substance ID: 300000046327
EV Medicinal Product Code: PRD9919073

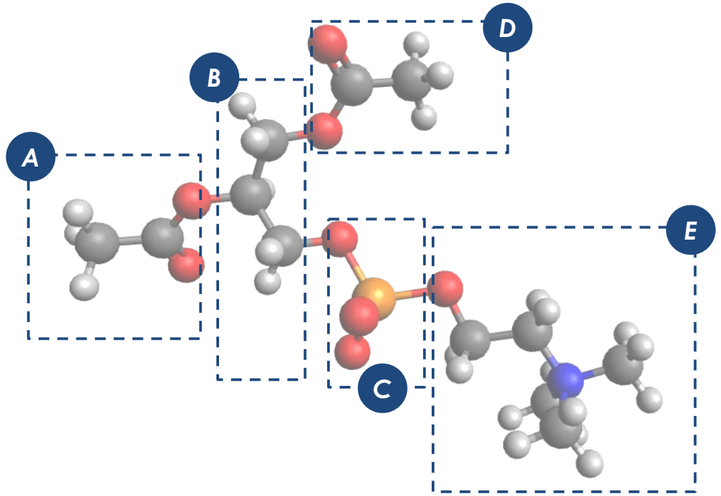
HRO350 is produced under **GMP conditions** and is planned marketed as a **per oral prescription medicine**

Herring roe is rich in polyunsaturated fatty acids with **high phospholipid content**

Phospholipids esters have metabolites with **immuno-modulatory properties,** and can function as both carriers and active molecules[1]

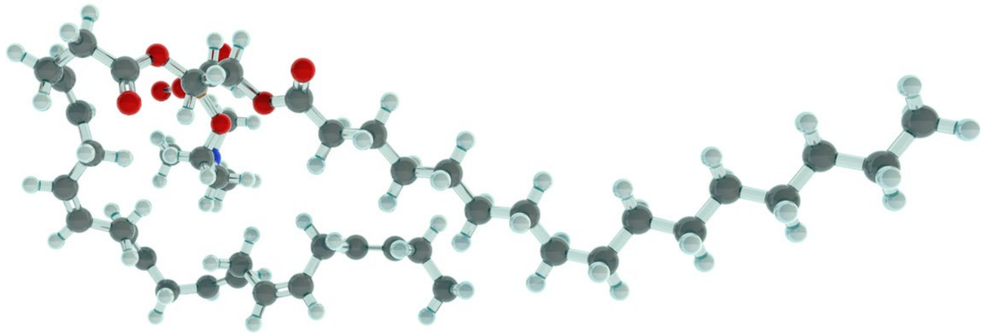
Mode-of-action data in psoriasis from **cell studies**[2]

Core structure of phospholipid esters from herring roe



- A FATTY ACID
- B GLYCEROL
- C PO_4
- D FATTY ACID
- E ALCOHOL

Example phospholipid: PC(22:6n3/16:0)

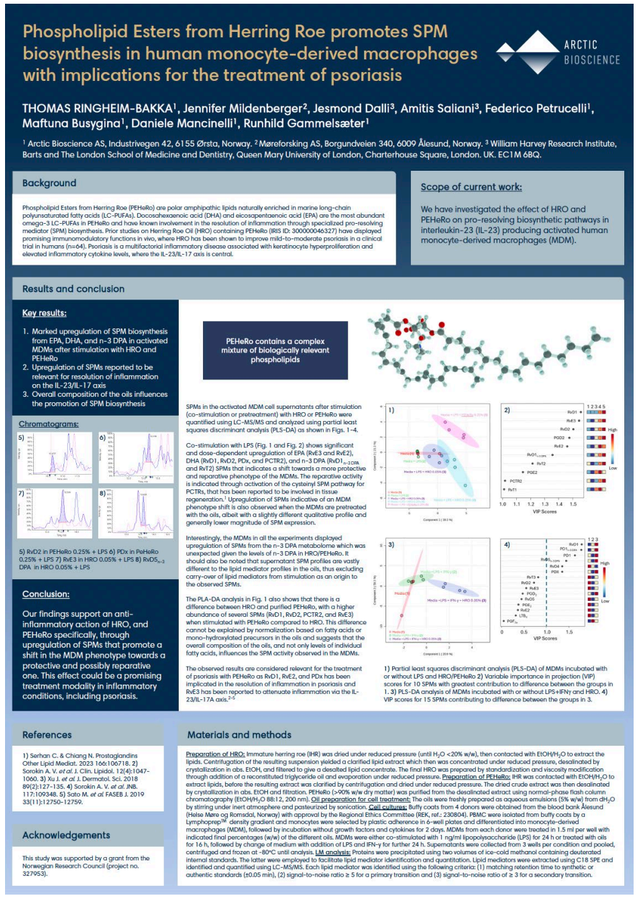


API: Active Product Ingredient; GMP: Good Manufacturing Practices

References: 1) Cook CM, Hallaråker H, Sæbø PC, et al. Bioavailability of long chain omega-3 polyunsaturated fatty acids from phospholipid-rich herring roe oil in men and women with mildly elevated triacylglycerols. Prostaglandins Leukot Essent Fatty Acids. 2016;111:17-24. doi:10.1016/j.plefa.2016.01.007; 2) Forskningsradet (Research Council of Norway), Properties of phospholipids d Herring Roe in Psoriasis, available online

Bioactive lipids´ role in inflammation mediation

Lipid-mediators, metabolic products of phospholipid esters from herring roe, are proposed to play a role in inflammatory diseases, including psoriasis



Phospholipid Esters from Herring Roe promotes SPM biosynthesis in human monocyte-derived macrophages with implications for the treatment of psoriasis

ARCTIC BIOSCIENCE

THOMAS RINGHEIM-BAKKA[1], Jennifer Mildenberger[2], Jesmond Dalli[3], Amitis Saliani[3], Federico Petrucelli[1], Maftuna Busygina[1], Daniele Mancinelli[1], Runhild Gammelsæter[1]

[1] Arctic Bioscience AS, Industrivegen 42, 6155 Ørsta, Norway. [2] Møreforsking AS, Borgundveien 340, 6009 Ålesund, Norway. [3] William Harvey Research Institute, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, Charterhouse Square, London. UK. EC1M 6BQ.

Background

Phospholipid Esters from Herring Roe (PEHeRo) are polar amphipathic lipids naturally enriched in marine long-chain polyunsaturated fatty acids (LC-PUFAs). Docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) are the most abundant omega-3 LC-PUFAs in PEHeRo and have known involvement in the resolution of inflammation through specialized pro-resolving mediator (SPM) biosynthesis. Prior studies on Herring Roe Oil (HRO) containing PEHeRo (BIS ID: 3000004327) have displayed promising immunomodulatory functions in vivo, where HRO has been shown to improve mild-to-moderate psoriasis in a clinical trial in humans (n=64). Psoriasis is a multifactorial inflammatory disease associated with keratinocyte hyperproliferation and elevated inflammatory cytokine levels, where the IL-23/IL-17 axis is central.

Scope of current work:

We have investigated the effect of HRO and PEHeRo on pro-resolving biosynthetic pathways in interleukin-23 (IL-23) producing activated human monocyte-derived macrophages (MDM).

Results and conclusion

Key results:

1. Marked upregulation of SPM biosynthesis from EPA, DHA, and n-3 DPA in activated MDMs after stimulation with HRO and PEHeRo
2. Upregulation of SPMs reported to be relevant for resolution of inflammation on the IL-23/IL-17 axis
3. Overall composition of the oils influences the promotion of SPM biosynthesis

PEHeRo contains a complex mixture of biologically relevant phospholipids

Chromatograms:

5) RvD2 in PEHeRo 0.25% + LPS 6) PDx in PeHeRo 0.25% + LPS 7) ReE3 in HRO 0.05% + LPS 8) $RvD5_{n-3}$ DPA in HRO 0.05% + LPS

SPMs in the activated MDM cell supernatants after stimulation (co-stimulation or pretreatment) with HRO or PEHeRo were quantified using LC-MS/MS and analyzed using partial least squares discriminant analysis (PLS-DA) as shown in Figs. 1–4.

Co-stimulation with LPS (Fig. 1 and Fig. 2) shows significant and dose-dependent upregulation of EPA (ReE3 and ReE2), DHA (RvD1, RvD2, PDx, and PCTR2), and n-3 DPA ($RvD1_{n-3\,DPA}$ and ReT2) SPMs that indicates a shift towards a more protective and reparative phenotype of the MDMs. The reparative activity is indicated through activation of the cysteinyl SPM pathway for PCTRs, that has been reported to be involved in tissue regeneration.[1] Upregulation of SPMs indicative of an MDM phenotype shift is also observed when the MDMs are pretreated with the oils, albeit with a slightly different qualitative profile and generally lower magnitude of SPM expression.

Interestingly, the MDMs in all the experiments displayed upregulation of SPMs from the n-3 DPA metabolome which was unexpected given the levels of n-3 DPA in HRO/PEHeRo. It should also be noted that supernatant SPM profiles are vastly different to the lipid mediator profiles in the oils, thus excluding carry-over of lipid mediators from stimulation as an origin to the observed SPMs.

The PLA-DA analysis in Fig. 1 also shows that there is a difference between HRO and purified PEHeRo, with a higher abundance of several SPMs (RvD1, RvD2, PCTR2, and ReE3) when stimulated with PEHeRo compared to HRO. This difference cannot be explained by normalization based on fatty acids or mono-hydroxylated precursors in the oils and suggests that the overall composition of the oils, and not only levels of individual fatty acids, influences the SPM activity observed in the MDMs.

The observed results are considered relevant for the treatment of psoriasis with PEHeRo as RvD1, ReE2, and PDx has been implicated in the resolution of inflammation in psoriasis and ReE3 has been reported to attenuate inflammation via the IL-23/IL-17A axis.[2-5]

1) Partial least squares discriminant analysis (PLS-DA) of MDMs incubated with or without LPS and HRO/PEHeRo 2) Variable importance in projection (VIP) scores for 10 SPMs with greatest contribution to difference between the groups in 1. 3) PLS-DA analysis of MDMs incubated with or without LPS+IFNγ and HRO. 4) VIP scores for 15 SPMs contributing to difference between the groups in 3.

Conclusion:

Our findings support an anti-inflammatory action of HRO, and PEHeRo specifically, through upregulation of SPMs that promote a shift in the MDM phenotype towards a protective and possibly reparative one. This effect could be a promising treatment modality in inflammatory conditions, including psoriasis.

References

1) Serhan C. & Chiang N. Prostaglandins Other Lipid Mediat. 2023 166108718. 2) Sorokin A. V. *et al.* J. Clin. Lipidol. 12(4):1047-1060. 3) Xu J. *et al.* J. Dermatol. Sci. 2018 89(2):127-135. 4) Sorokin A. V. *et al.* JNB. 117:109348. 5) Sato M. *et al.* FASEB J. 2019 33(11):12750–12759.

Acknowledgements

This study was supported by a grant from the Norwegian Research Council (project no. 327953).

Materials and methods

Preparation of HRO: Immature herring roe (HR) was dried under reduced pressure (until H_2O <20% w/w), then contacted with EtOH/H_2O to extract the lipids. Centrifugation of the resulting suspension yielded a clarified lipid extract which then was concentrated under reduced pressure, desalinated by crystallization in abs. EtOH, and filtered to give a desalted lipid concentrate. The final HRO was prepared by standardization and viscosity modification through addition of a reconstituted triglyceride oil and evaporation under reduced pressure. Preparation of PEHeRo: IHR was contacted with EtOH/H_2O to extract lipids, before the resulting extract was clarified by centrifugation and dried under reduced pressure. The dried crude extract was then desalinated by crystallization in abs. EtOH and filtration. PEHeRo (>90% w/w dry matter) was purified from the desalinated extract using normal-phase flash column chromatography (EtOH/H_2O 88:12, 200 nm). Oil preparation for cell treatment: The oils were freshly prepared as aqueous emulsions (5% w/w) from H_2O by stirring under inert atmosphere and pasteurized by sonication. Cell cultures: Buffy coats from 4 donors were obtained from the blood bank Ålesund (Helse Møre og Romsdal, Norway) with approval by the Regional Ethics Committee (REK, ref.: 230804). PBMC were isolated from buffy coats by a Lymphoprep™ density gradient and monocytes were selected by plastic adherence in 6-well plates and differentiated into monocyte-derived macrophages (MDM), followed by incubation without growth factors and cytokines for 2 days. MDMs from each donor were treated in 1.5 ml per well with indicated final percentages (w/w) of the different oils. MDMs were either co-stimulated with 1 ng/ml lipopolysaccharide (LPS) for 24 h or treated with oils for 16 h, followed by change of medium with addition of LPS and IFN-γ for further 24 h. Supernatants were collected from 3 wells per condition and pooled, centrifuged and frozen at -80°C until analysis. LM analysis: Proteins were precipitated using two volumes of ice-cold methanol containing deuterated internal standards. The latter were employed to facilitate lipid mediator identification and quantitation. Lipid mediators were extracted using C18 SPE and identified and quantified using LC-MS/MS. Each lipid mediator was identified using the following criteria: (1) matching retention time to synthetic or authentic standards (±0.05 min), (2) signal-to-noise ratio ≥ 5 for a primary transition and (3) signal-to-noise ratio of ≥ 3 for a secondary transition.

Specialized pro-resolving mediators (SPMs)

- Bioactive lipids that actively terminate inflammation and drive the restoration of tissue homeostasis through activating signs of resolution[1,2]
- Lipid mediators are elevated in lesional psoriatic skin[3]
- SPMs' effects have been demonstrated in-vitro (e.g. Maresin-1 [MaR1]); MaR1 has been shown to suppress IL-17A production in a murine psoriasis model[4]

Cellular research on SPMs supports the anti-inflammatory mechanism of HRO350[5]

- HRO350 activates the production of SPMs that promote a shift towards a protective and possibly reparative phenotype of monocyte derived macrophages
- Data supports the anti-inflammatory actions of API PEHeRo specifically
- **Data demonstrates a promising treatment modality in inflammatory conditions including psoriasis**

References: 1) Basil MC, Levy BD. Specialized pro-resolving mediators: endogenous regulators of infection and inflammation. Nat Rev Immunol. 2016;16(1):51-67; 2) Chiurchiù V, Leuti A, Maccarrone M. Bioactive Lipids and Chronic Inflammation: Managing the Fire Within. Front Immunol. 2018;9:38. Published 2018 Jan 29; 3) O' Serhan CN, Levy BD. Resolvins in inflammation: emergence of the pro-resolving superfamily of mediators. J Clin Invest. 2018;128(7):2657-2669; 3) Sorokin AV, Norris PC, English JT, et al. Identification of proresolving and inflammatory lipid mediators in human psoriasis. J Clin Lipidol. 2018;12(4):1047-1060; 4) Saito-Sasaki N, Sawada Y, Mashima E, et al. Maresin-1 suppresses imiquimod-induced skin inflammation by regulating IL-23 receptor expression. Sci Rep. 2018;8(1):5522. Published 2018 Apr 3.
Ongoing research: Forskningsradet (Research Council of Norway), Properties of phospholipids d Herring Roe in Psoriasis, available online . 5) Ringheim-Bakka T, Mildenberger J, Dalli J, Saliani A, Petrucelli F, Busygina M, Mancinelli D, Gammelsæter R. Phospholipid Esters from Herring Roe promotes SPM biosynthesis in human monocyte-derived macrophages with implications for the treatment of psoriasis. Poster (37) at the 9th European Workshop on Lipid Mediators, June 26-28th, 2024.

Resolve - not block - inflammation: a therapeutic frontier

The API (PEHeRo) promotes SPM biosynthesis in immune cells with implications for the treatment of psoriasis

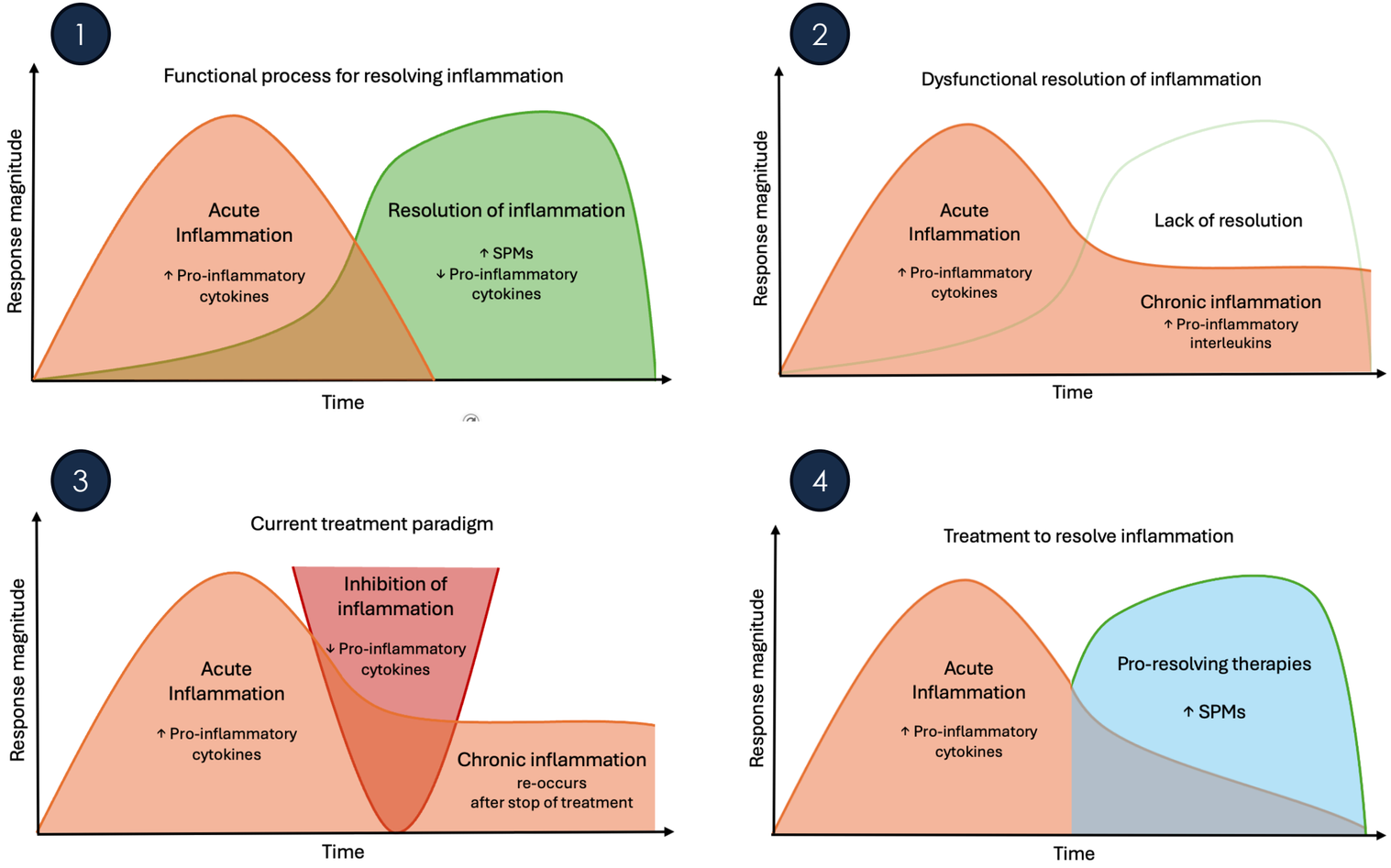
Specialized pro-resolving mediators (SPMs) are a type of bioactive lipids that actively terminate inflammation and drive the restauration of tissue homeostasis [1]

Lipid mediators are **elevated in lesional psoriatic skin**[3].

Most existing drugs are designed to reduce inflammation by inhibiting pro-inflammatory cytokines

Data on SPMs supporting an **anti-inflammatory action of HRO350, and PEHeRo specifically**

- upregulating the production of SPMs which promote a shift towards a protective and possibly reparative phenotype of monocyte-derived macrophages



Fullerton, J., Gilroy, D. Resolution of inflammation: a new therapeutic frontier. *Nat Rev Drug Discov* **15**, 551–567 (2016). https://doi.org/10.1038/nrd.2016.39

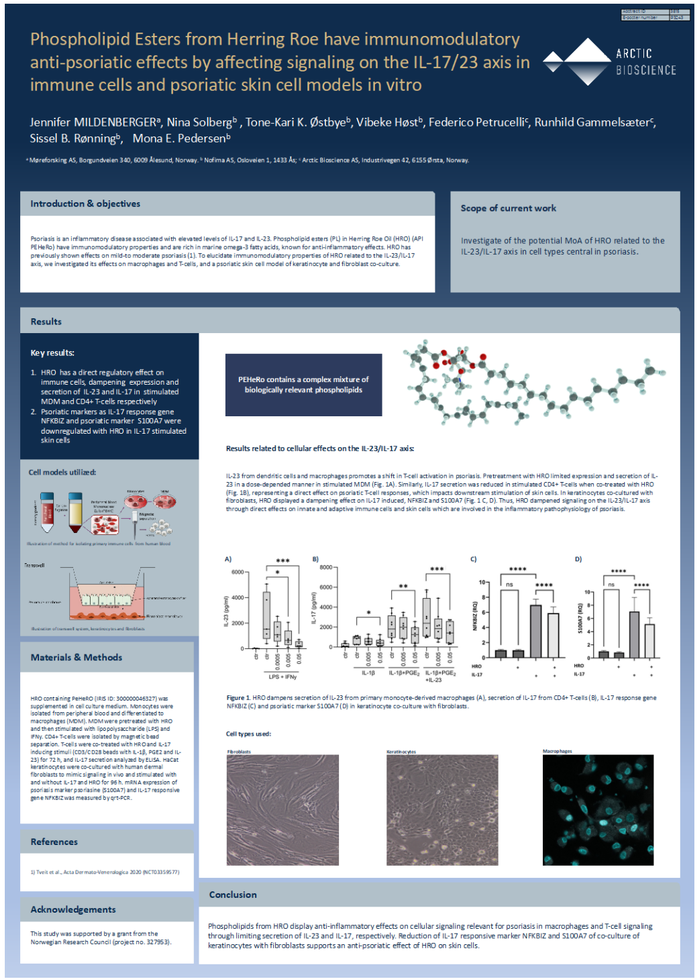
Park J, Langmead CJ, Riddy DM. New Advances in Targeting the Resolution of Inflammation: Implications for Specialized Pro-Resolving Mediator GPCR Drug Discovery *ACS Pharmacol. Transl. Sci.* 2020, 3, 1, 88–106;

Serhan CN, Chiang N, Dalli J. The resolution code of acute inflammation: Novel pro-resolving lipid mediators in resolution. Seminars in Immunology. 2015 May;27(3):200-215. DOI: 10.1016/j.smim.2015.03.004. PMID: 25857211; PMCID: PMC4515371.

Ringheim-Bakka T, Mildenberger J, Dalli J, Saliani A, Petrucelli F, Busygina M, Mancinelli D, Gammelsæter R. Phospholipid Esters from Herring Roe promotes SPM biosynthesis in human monocyte-derived macrophages with implications for the treatment of psoriasis. Poster (37) at the 9th European Workshop on Lipid Mediators, June 26-28th, 2024.

Anti-psoriatic effects of herring roe oil in immune cells and skin cells

Cellular studies show effects on the phospholipid esters from herring roe on signaling on the IL-17/23 axis in immune cells and psoriatic skin cell models



Phospholipid Esters from Herring Roe have immunomodulatory anti-psoriatic effects by affecting signaling on the IL-17/23 axis in immune cells and psoriatic skin cell models in vitro

ARCTIC BIOSCIENCE

Jennifer MILDENBERGER[a], Nina Solberg[b], Tone-Kari K. Østbye[b], Vibeke Høst[b], Federico Petrucelli[c], Runhild Gammelsæter[c], Sissel B. Rønning[b], Mona E. Pedersen[b]

[a] Møreforsking AS, Borgundveien 340, 6009 Ålesund, Norway. [b] Nofima AS, Osloveien 1, 1433 Ås; [c] Arctic Bioscience AS, Industrivegen 42, 6155 Ørsta, Norway.

Introduction & objectives

Psoriasis is an inflammatory disease associated with elevated levels of IL-17 and IL-23. Phospholipid esters (PL) in Herring Roe Oil (HRO) (API PE:HeRo) have immunomodulatory properties and are rich in marine omega-3 fatty acids, known for anti-inflammatory effects. HRO has previously shown effects on mild-to moderate psoriasis (1). To elucidate immunomodulatory properties of HRO related to the IL-23/IL-17 axis, we investigated its effects on macrophages and T-cells, and a psoriatic skin cell model of keratinocyte and fibroblast co-culture.

Scope of current work

Investigate of the potential MoA of HRO related to the IL-23/IL-17 axis in cell types central in psoriasis.

Results

Key results:

1. HRO has a direct regulatory effect on immune cells, dampening expression and secretion of IL-23 and IL-17 in stimulated MDM and CD4+ T-cells respectively
2. Psoriatic markers as IL-17 response gene NFKBIZ and psoriatic marker S100A7 were downregulated with HRO in IL-17 stimulated skin cells

PEHeRo contains a complex mixture of biologically relevant phospholipids

Cell models utilized:

Illustration of method for isolating primary immune cells from human blood

Illustration of transwell system, keratinocytes and fibroblasts

Results related to cellular effects on the IL-23/IL-17 axis:

IL-23 from dendritic cells and macrophages promotes a shift in T-cell activation in psoriasis. Pretreatment with HRO limited expression and secretion of IL-23 in a dose-depended manner in stimulated MDM (Fig. 1A). Similarly, IL-17 secretion was reduced in stimulated CD4+ T-cells when co-treated with HRO (Fig. 1B), representing a direct effect on psoriatic T-cell responses, which impacts downstream stimulation of skin cells. In keratinocytes co-cultured with fibroblasts, HRO displayed a dampening effect on IL-17 induced, NFKBIZ and S100A7 (Fig. 1 C, D). Thus, HRO dampened signaling on the IL-23/IL-17 axis through direct effects on innate and adaptive immune cells and skin cells which are involved in the inflammatory pathophysiology of psoriasis.

Figure 1. HRO dampens secretion of IL-23 from primary monocyte-derived macrophages (A), secretion of IL-17 from CD4+ T-cells (B), IL-17 response gene NFKBIZ (C) and psoriatic marker S100A7 (D) in keratinocyte co-culture with fibroblasts.

Cell types used:

Fibroblasts | Keratinocytes | Macrophages

Materials & Methods

HRO containing PeHeRO (IRIS ID: 3000000465327) was supplemented in cell culture medium. Monocytes were isolated from peripheral blood and differentiated to macrophages (MDM). MDM were pretreated with HRO and then stimulated with lipopolysaccharide (LPS) and IFNγ. CD4+ T-cells were isolated by magnetic bead separation. T-cells were co-treated with HRO and IL-17 inducing stimuli (CD3/CD28 beads with IL-1β, PGE2 and IL-23) for 72 h, and IL-17 secretion analyzed by ELISA. HaCat keratinocytes were co-cultured with human dermal fibroblasts to mimic signaling in vivo and stimulated with and without IL-17 and HRO for 96 h. mRNA expression of psoriasis marker psoriasine (S100A7) and IL-17 responsive gene NFKBIZ was measured by qrt-PCR.

References

1) Tveit et al., Acta Dermato-Venereologica 2020 (NCT03319577)

Acknowledgements

This study was supported by a grant from the Norwegian Research Council (project no. 327953).

Conclusion

Phospholipids from HRO display anti-inflammatory effects on cellular signaling relevant for psoriasis in macrophages and T-cell signaling through limiting secretion of IL-23 and IL-17, respectively. Reduction of IL-17 responsive marker NFKBIZ and S100A7 of co-culture of keratinocytes with fibroblasts supports an anti-psoriatic effect of HRO on skin cells.

Psoriasis is an inflammatory disease associated with elevated levels of the cytokines IL-17 and IL-23

- Cellular studies were conducted to investigate effects of HRO on macrophages and T-cells, and a psoriatic skin cell model of keratinocyte and fibroblast co-culture.

Cellular research on support an anti-psoriatic mechanisms of HRO350

- Phospholipid Esters from Herring Roe can have immunomodulatory anti-psoriatic effects by affecting signaling on the IL-17/23 axis in immune cells and psoriatic skin cell models.

This increases the understanding of the potential mode-of-action of HRO350

Reference: Mildenberger J, Solberg N, Østbye TK, Høst V, Petruccelli F, Gammelsæter R, Rønning SB, Pedersen ME. "Phospholipid Esters from Herring Roe promotes SPM biosynthesis in human monocyte-derived macrophages with implications for the treatment of psoriasis". Poster 3243 at the EADV congress, Amsterdam, September 25-28th, 2024.

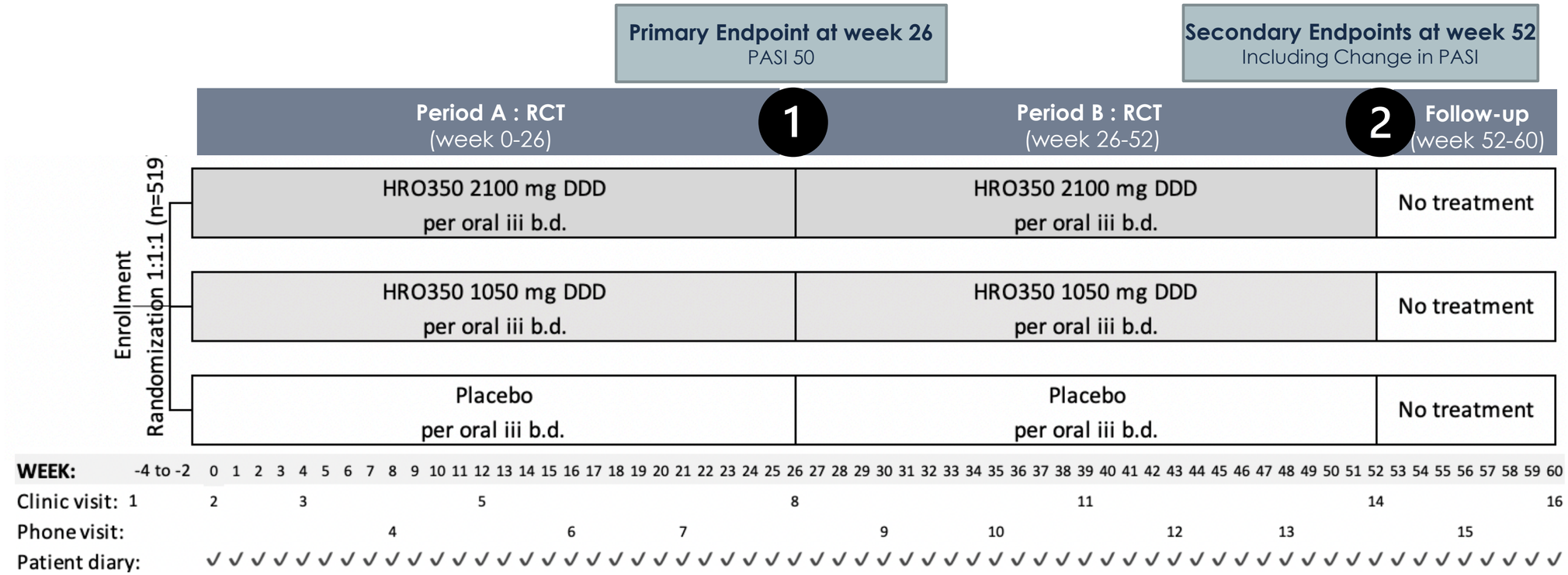
ARCTIC BIOSCIENCE

HRO350 Drug Development Program

Phase IIb clinical plan & development milestones

Large phase IIb study to investigate efficacy, safety, and dose of HRO350 versus placebo in mild-to-moderate psoriasis

- **One year treatment, placebo controlled, international, multicenter** Phase IIb study with **521 randomized patients**
- Protocol designed based on **Scientific Advice from the EMA**
- **Approved and ongoing** in the UK, Germany, Poland, Finland and Norway
- Study endpoints include **PASI score** and multiple secondary endpoints



PASI: Psoriasis Area and Severity Index (0–72-point scale where < 10 is mild-moderate disease); RCT: Randomized Controlled Trial
b.d. = twice daily; iii = three capsules; DDD = defined daily dose

Endpoints analysed at 26 and 52 weeks

HeROPA phase 2b clinical trial in mild-to-moderate psoriasis

Primary endpoint:

The proportion of patients with ≥50% reduction in Psoriasis Area and Severity Index (PASI50). [From Baseline to Week 26]

Secondary endpoints at 52 weeks include:

Physical symptom assessments
Comparisons of Psoriasis Area and Severity Index (PASI) scores
Body Surface Area (BSA)
static Physician Global Assessment (sPGA)
Scalp PGA (ScPGA)

Patient Reported Outcomes

SF-36

Dermatology Life Quality Index (DLQI)

Safety
Treatment-emergent Adverse Events (TEAEs) and Serious Adverse Events (SAEs)

HeROPA
Six-month read-out

Primary endpoint not met: PASI50 responders

The proportion of patients with ≥50% reduction in Psoriasis Area and Severity Index (PASI) from baseline to week 26 was compared between HRO350 and placebo

Results of the readout

- The response rate in the HRO350 high dose group was close to the estimated effect level
- Number of patients with response in the placebo group was higher than predicted, thus no statistical difference demonstrating difference from placebo
- No safety concerns so far in the HeROPA trial, and no unexpected serious events related to the study medication have been reported to date.

Limitations on details from readout

- Numeric data results cannot be provided as the study is ongoing and patients are still being treated
  - International guidelines on conducting clinical trials dictates that patients and investigators should not be provided with information which may impact the integrity of treatment and avoid bias
  - For ethical reasons and to safeguard patients who are participating in the trail
  - Secondary endpoints at week 52 will be extremely important to understand the placebo rate
- Data will be disclosed after all patients have completed the trial and analysis has been conducted

PASI: Psoriasis Area and Severity Index, a scale from 0-72.

Psoriasis is a disease with natural fluctuations

- Psoriasis is a chronic disease
- It is not uncommon for the symptoms of psoriasis to fluctuate through the seasons
- Spontaneous improvements in summer months can be observed – as for light treatment
- The HeROPA study was designed with 52 weeks of placebo control to address this

High placebo rates

- an inherent challenge in clinical trials in milder disease states

- In randomized parallel placebo-controlled trial, the observed relative treatment difference gives an estimate of an apparent treatment effect which does not reflect the full treatment effect due to the dilution resulting from the presence of placebo responders.

- High placebo rates of success can be related to:
  - Disease severity – more difficult to assess changes in mild disease states
  - Diseases with natural fluctuations – spontaneous improvements

References: Chi G. et al., On clinical trials with a high placebo response rate. Contemporary Clinical Trials Communications 2 (2016) 34 – 53;

ARCTIC
BIOSCIENCE

Arctic Bioscience
The way forward

What it means for patients

HRO350 as a potential treatment option for mild-to-moderate psoriasis

Data after 52 weeks of treatment will give further information about the benefit-risk profile of HRO350 and long-term treatment results versus placebo in a population with fluctuating disease.

- No safety concerns so far in the HeROPA trial, and no unexpected serious events related to the study medication have been reported to date.

HRO350 could still be a unique oral treatment option for mild-to-moderate psoriasis

- New mode of action in resolution of inflammation
- Natural raw material

What it means for Arctic Bioscience

Considerations in continued development of HRO350 as a treatment option for mild-to-moderate psoriasis

- Analyse 52-week data to look at long term outcomes of HRO350 versus placebo in this patient population
- Wait with planning phase III clinical trial in mild-to-moderate psoriasis until 52 weeks data are evaluated
- Wait with setting up production line until the further drug development program is clarified
- Explore potential alternative routes (non-prescription) to market for HRO350

What it means for Arctic Bioscience

Financials

- The liquidity situation has been closely monitored over time and various financing alternatives are being considered to secure the future funding of the company's activities - post the primary data readout
- Cash preservation initiatives are implemented to ensure that the available financial resources will sustain the company into 2025, enabling the achievement of upcoming key inflection points in Q1
- The company will perform a full strategic and organizational assessment to secure a sustainable financial platform going forward
- The Company expect to continue delivering double digit annual nutra revenue growth towards profitability in 12-18 Months

Contact

Arctic Bioscience AS

Business address:

Industrivegen 42

6155 Ørsta

Norway

www.arctic-bioscience.com

CEO: Christer Valderhaug

christer@arctic-bioscience.com

Phone: +47 92084601

Medical Director: Runhild Gammelsæter

runhild@arctic-bioscience.com

Phone: +47 95933436

ARCTIC
BIOSCIENCE