



EU's forskningsprogram SEAFOODplus

Torger Børresen, Ph.D.
Koordinator SEAFOODplus
Danmarks Fiskeriundersøgelser
Afdeling for Fiskeindustriell Forskning
Lyngby, Danmark
tb@difres.dk

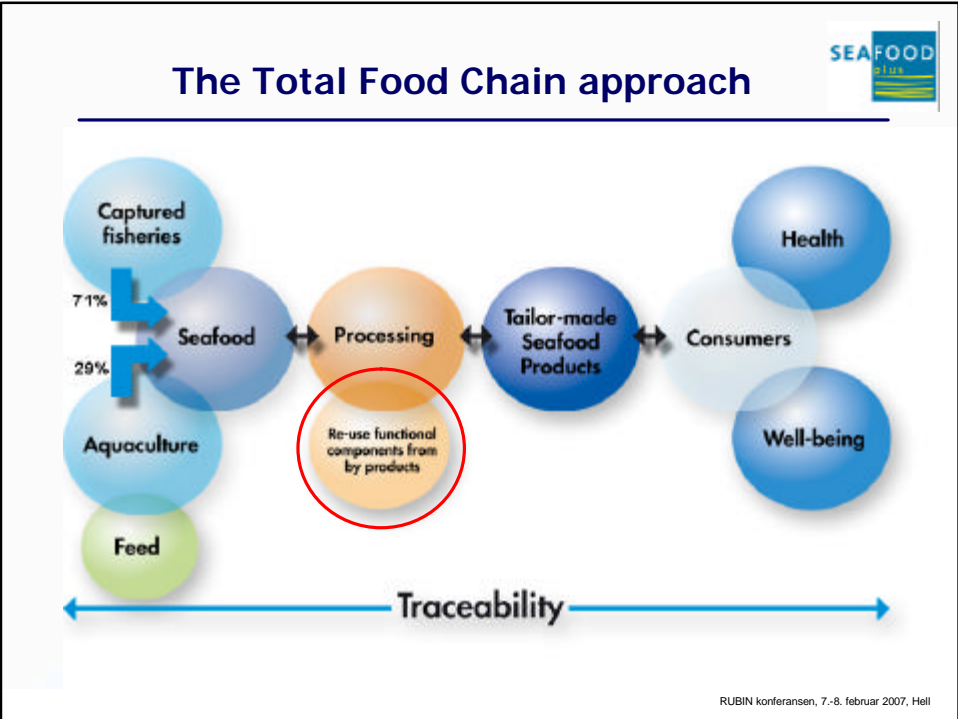
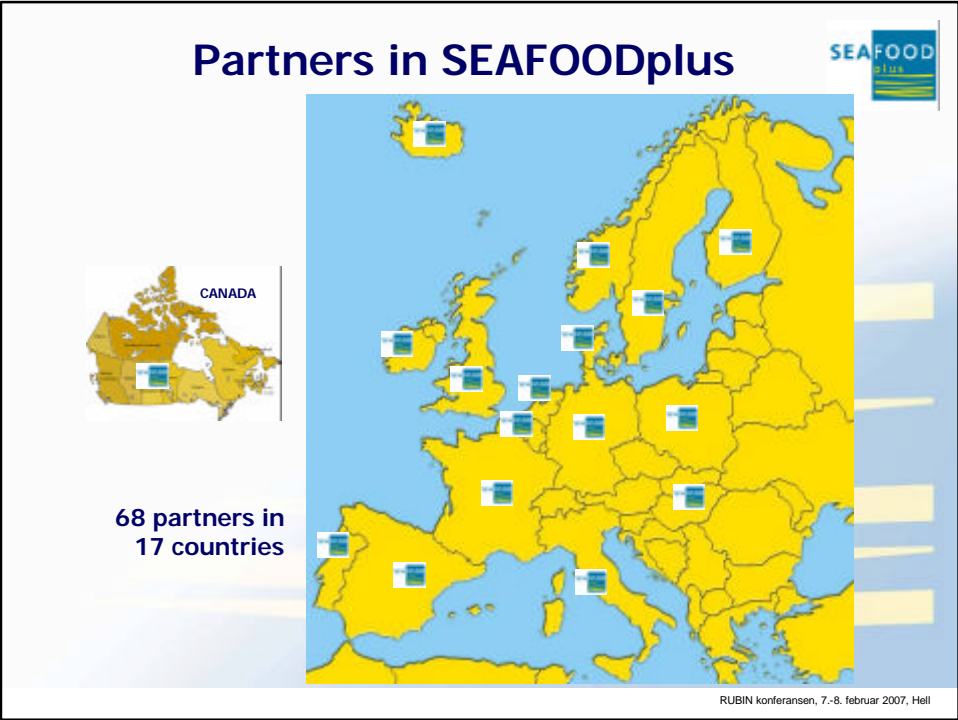
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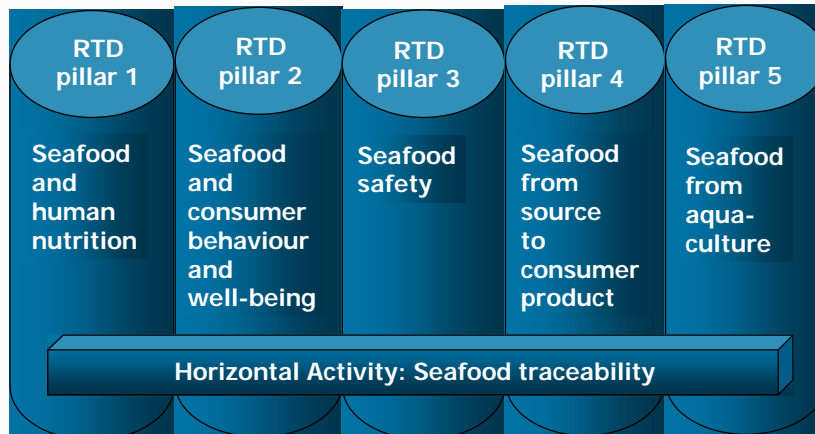
Key project information

- **Type of Project:** EU Integrated Project
- **Project title:** Health promoting, safe seafood of high eating quality in a consumer driven fork-to-farm concept
- **Coordinator:** Professor Torger Børresen, Ph.D.
- **Total budget:** 26 million euro
- **EU contribution:** 14.4 million euro
- **Number of partners:** 68
- **Number of countries involved:** 17
- **Main research areas:** 6
- **Number of sub-projects:** 20
- **Project start:** 1. January 2004
- www.seafoodplus.org

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Organising the research



The new approach: Integrating different research disciplines covering the total seafood chain

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RTD 1 Coordinator:
Gertjan Schaafsma, WUR, NL



RTD pillar 1

Seafood and human nutrition

Overall objective:

Reduce incidences of nutrition related chronic diseases (cardiovascular, cancer and inflammatory), treat weight problems and prevent osteoporosis and postpartum depression

1.1 FISHGASTRO



Liz Lund, IFR, UK

1.2 YOUNG




Inga Thorsdottir, LSH, IS


1.3 METAHEART



Ingeborg Brouwer, WCFS, NL

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RTD 2 Coordinator:
Karen Brunsø, MAPP, DK 


RTD
pillar 2



Overall objective:
Provide improved and better balanced health-related communication strategies to consumers

Seafood and consumer behaviour and well-being

 **2.1 CONSUMERSURVEY** 

 **2.2 SEAFOODSENSE** 

 **2.3 SEA-INFOCOM** 

 **2.4 CONSUMEREVALUATE** 


Karen Brunsø, MAPP, DK


Emilia Martinsdottir, IFL, IS

Wim Verbeke, UGENT, BE

Svein Ottar Olsen, NIFA, NO

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RTD 3 Coordinator:
Bill Doré, MI, IE 



RTD
pillar 3



Overall objective:
Avoiding risks caused by viral and bacterial contamination, and prevent occurrence of biogenic amines in seafood

Seafood safety

 **3.1 REFHEPA** 

 **3.2 REDRISK** 

 **3.3 SEABAC** 

 **3.4 BIOCUM** 

Albert Bosch, UB, ES

Monique Pommepuy, IFREMER, FR

Ron Lee, CEFAS, UK

Paw Dalgaard, DIFRES, DK

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RTD 4 Coordinator:
 Joop Luten, Fiskeriforskning, NO




RTD pillar 4



Seafood from source to consumer product

Overall objective:
 Develop consumer driven tailor-made, functional seafood products in a concept of full utilisation of raw materials

- ✍ **4.1 PROPEPHEALTH**
 Gudjon Thorkelson, IFL, IS
- ✍ **4.2 HURDLETECH**
 Françoise Leroi, IREMER, FR
- ✍ **4.3 LIPIDTEXT**
 Charlotte Jacobsen, DIFRES, DK
- ✍ **4.4 CONSUMERPRODUCTS**
 Mercedes Careche, CSIC, ES

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RTD 5 Coordinator:
 Børge Damsgård, Fiskeriforskning, NO

RTD pillar 5

Seafood from aquaculture

Overall objective:
 Provide farmed seafood from sustainable and environmentally friendly production systems through dietary modulation and modern genetic selection

- ✍ **5.1 BIOQUAL**
 Björn Thrandur Björnsson, UGOT, SE
- ✍ **5.2 ETHIQUAL**
 Hilde Tofte, NIFA, NO

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RTD 6 Coordinator:
Erling Larsen, DIFRES, DK



Horizontal Activity: Seafood traceability

Overall objective:
Implementation of validated traceability
systems spanning the total production chain

✍ **6.1 METHODOLOGY**



Marco Frederiksen,
DIFRES, DK

✍ **6.2 IMPLEMENTATION**



Jostein Storøy,
SINTEF, NO

✍ **6.3 VALIDATION**



Begoña Perez-Villarreal,
AZTI, ES

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- **Utnyttelse av biprodukter**
 - Technology push
 - Market pull
- **Hva gjør SEAFOODplus?**
 - Utnytter funksjonelle ingredienser med sunnhetsmessig potensiale
 - Dokumenterer helse-effekter
 - Forbedrer grunnlaget for fremstilling av produkter med god funksjonalitet og høy verdi

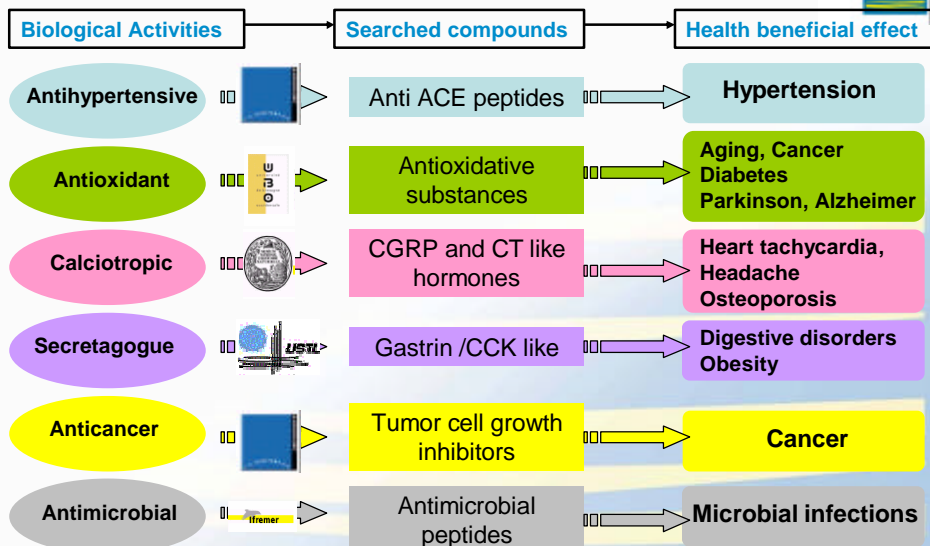
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Project PROPEPHEALTH

- Focus on peptides, protein hydrolysates for
 - the production of bioactive peptides
 - testing of their influence on the regulation of gut function, glycemia, blood pressure, and immune function
- Partners: 7 European R&D Institutes and 3 SMEs
- Results presented from
 - Laurent Picot, Laboratory of Biochemistry and Bio-organic Chemistry, University of La Rochelle, France

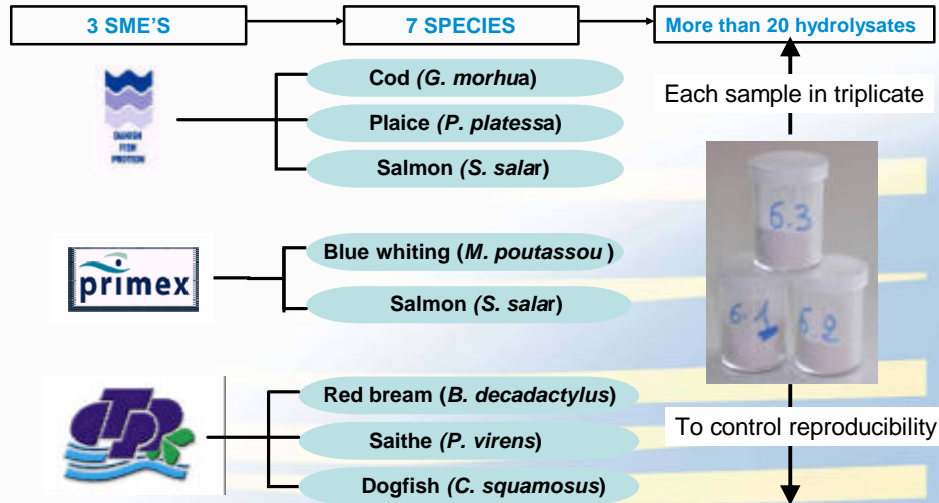
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Health beneficial compounds from FPH



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Fish protein hydrolysate preparation



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Antiproliferative activity of fish hydrolysates on cancer cell lines

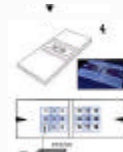


Human cancer cell lines (breast adenocarcinoma)
Growth until confluence in optimal conditions



Fish hydrolysate

Trypsine
Count



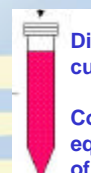
Cell suspension
in cell culture
medium
 10^5 cells . mL⁻¹



5000 cells, 1 g. L⁻¹
Growth for 72h
Cell proliferation assay
(colorimetric - viability)



Stock solution
in PBS pH 7.4 100 mM
to avoid pH variation
Sterile filtration
(0.2 μm)

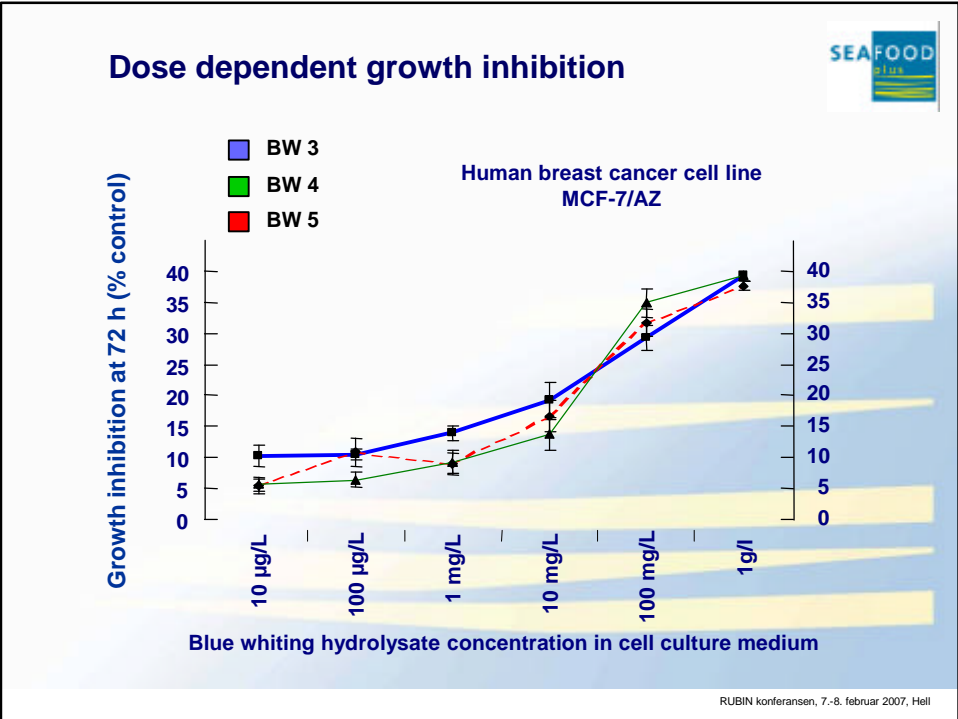
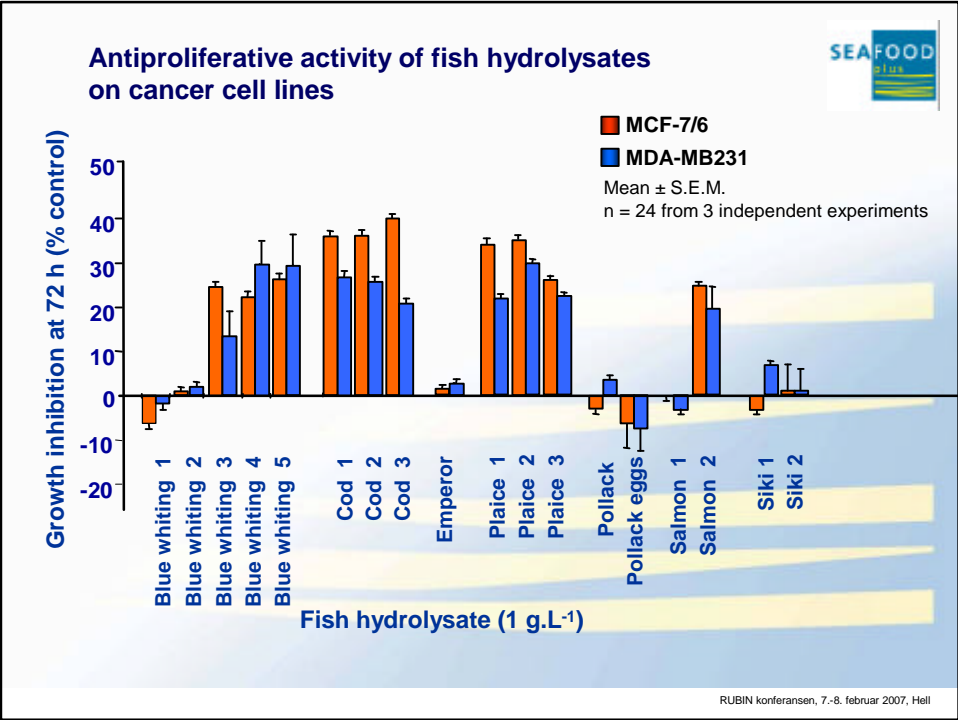


Dilution in cancer cell
culture medium

Control containing
equivalent amount
of PBS

→ **Growth inhibition**

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Summary antiproliferative activities of FPH

- Growth inhibition by 3 blue whiting, 3 plaice and 1 salmon hydrolysates
- Antiproliferative activity of Blue Whiting hydrolysates is dose-dependent and growth inhibition is measured with Blue whiting hydrolysate concentrations as low as 10 µg. L⁻¹
- Effect NaCl (tested in Blue whiting hydrolysate)
 - Although NaCl can clearly contribute to cancer cells growth inhibition, NaCl content is not the only parameter explaining antiproliferative activity of fish hydrolysates
- Effect lipids
 - No clear correlation between the lipid content and activity. The lipid content is not a pertinent indicator of antiproliferative activity although the presence of specific anticancer lipids is not excluded

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Health promoting components from other foods may be added to seafood

- Antioxidant dietary fibers
- 'A product containing significant amounts of natural antioxidants associated with the fiber matrix'
 - Mango
 - Guava
 - Pineapple
 - Seaweed Fucus
 - Grapes



Project
CONSUMERPRODUCTS

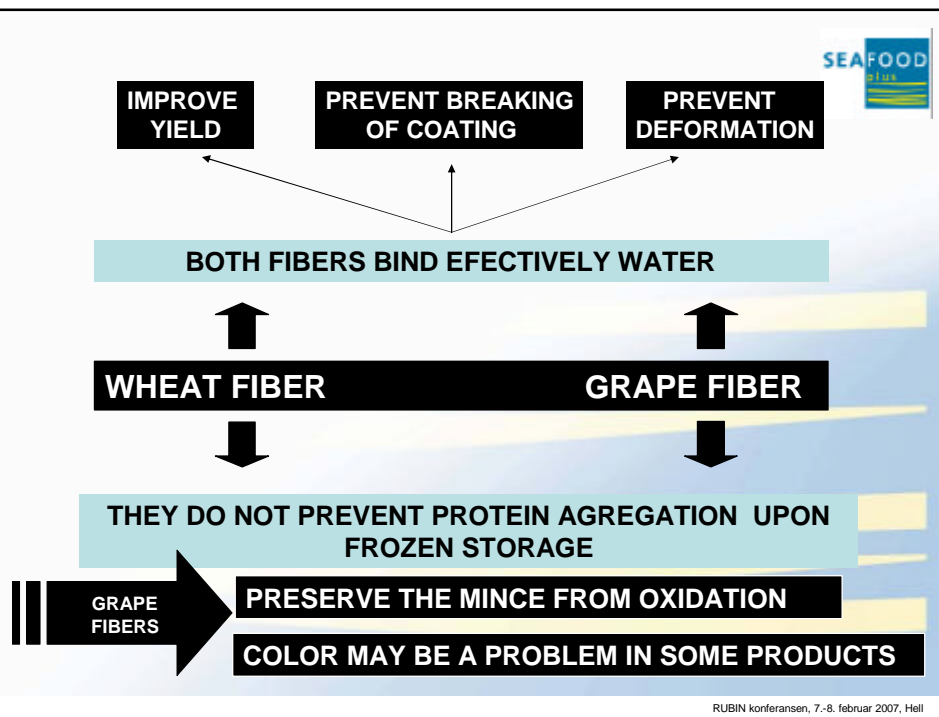
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Restructured seafood products

- Carriers of functional components
- Image
- Different matrices
- Maximal use of existing resources

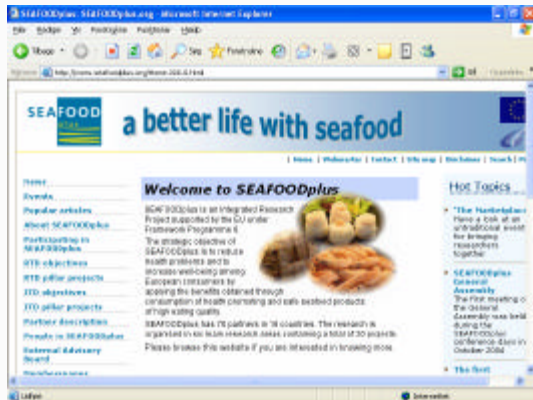


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For more information:
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Coordinator
 Torgjer Børresen, DIFRES



Secretariat manager
 Jette Donovan Jensen
 DIFRES

A better life with seafood...



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