

larvi 2013

6th fish & shellfish larviculture symposium



Øystein Saele



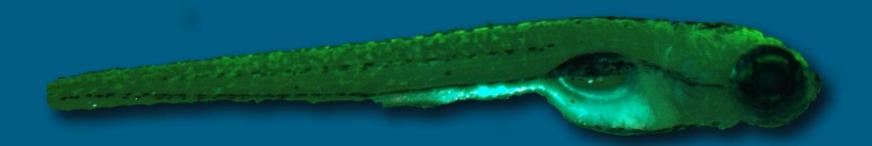


ghent university, belgium, 2-5 september 2013



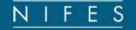


### Lipid digestion in first feeding larvae, an in vivo study



Øystein Sæle, Kari Elin Rød & Steven Farber

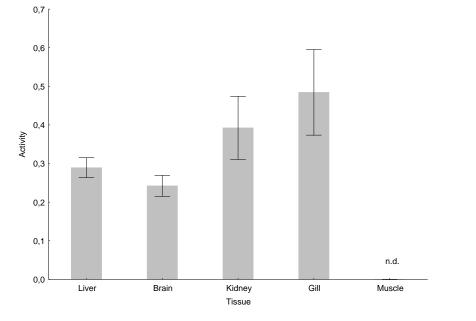




#### How to study lipid digestion in a 4 mm fish larvae?

Homogenate of whole animal

- Enzyme activity
- Protein (western blot/ELISA)
- Gene expression (qPCR)



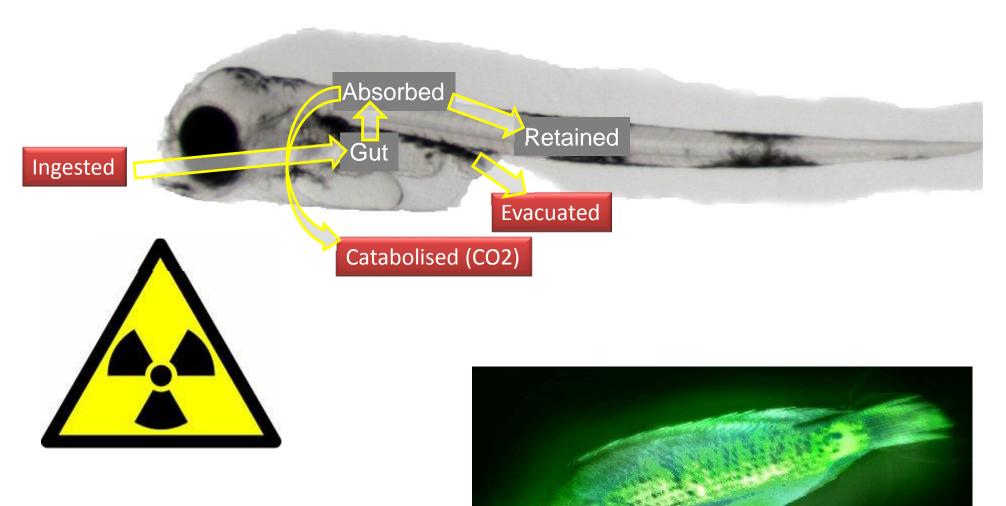
Sæle et al., 2011



## Radiolabeled lipids

NIFES

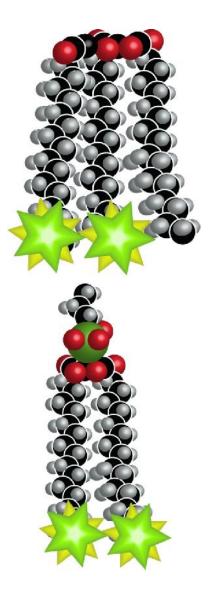
4.5 mm SL

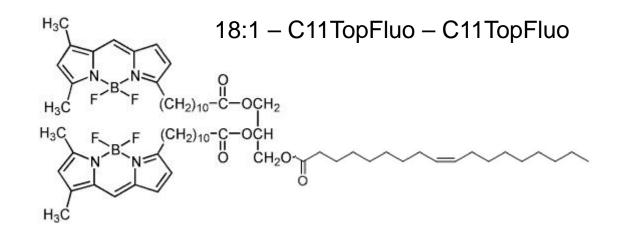




## Fluorescent lipids

NIFES

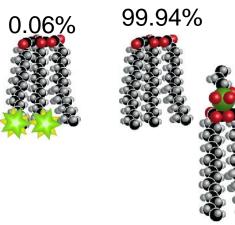


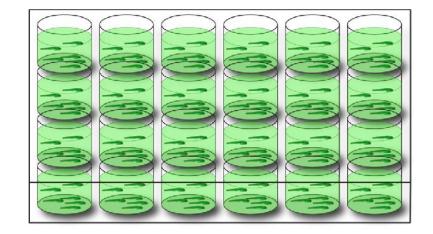




## Emulsions



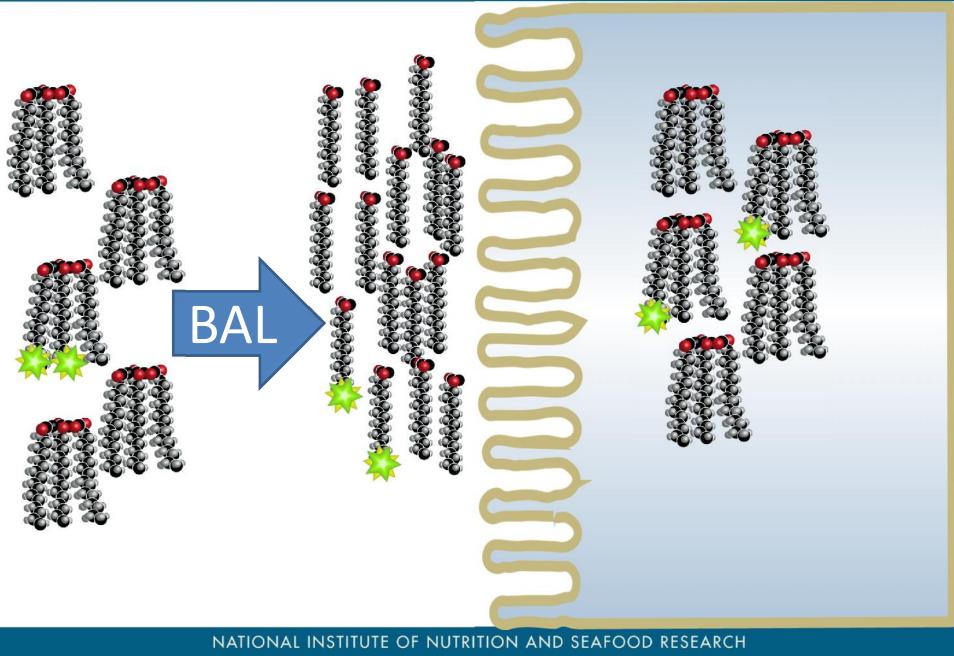




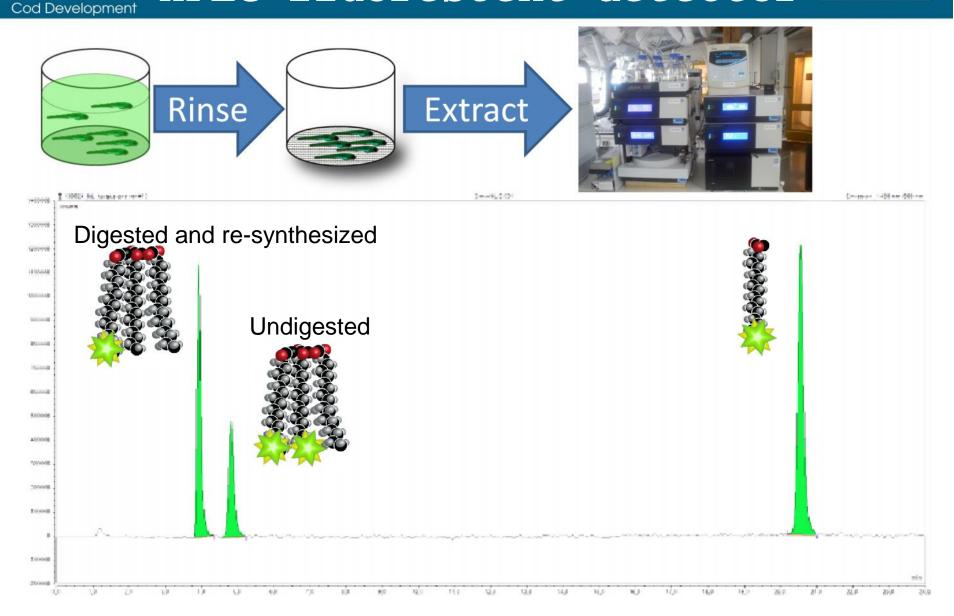


## Lipid digestion

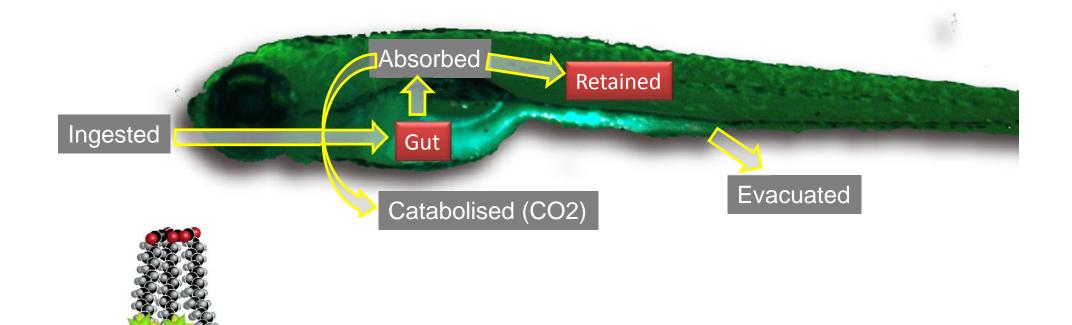




## COde HPLC fluorescent detector NIFES



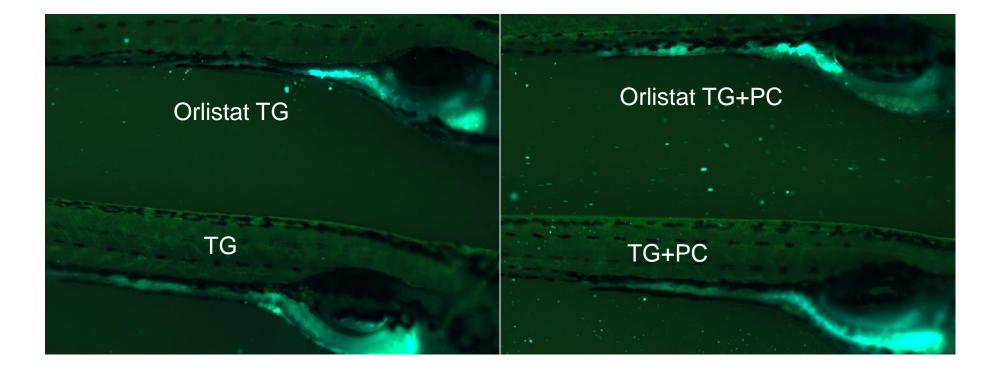






## Visualization



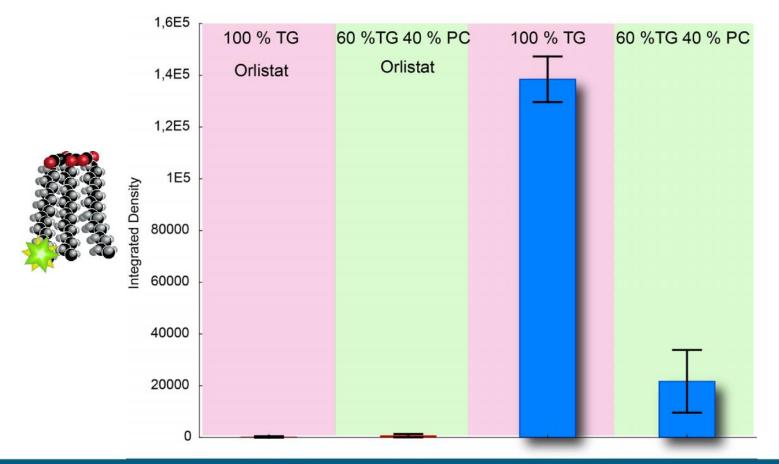




## Quantification

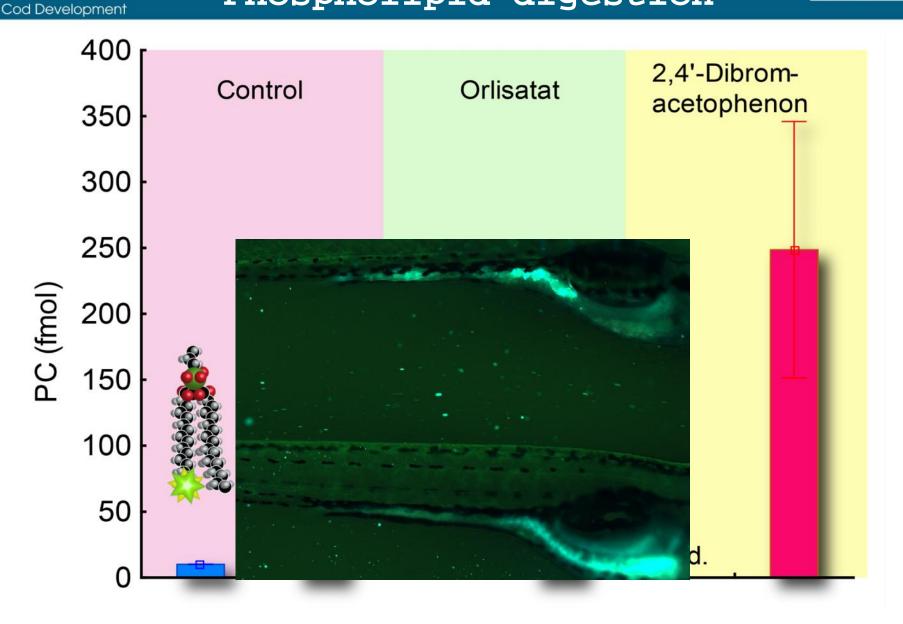
#### NIFES





## Phospholipid digestion

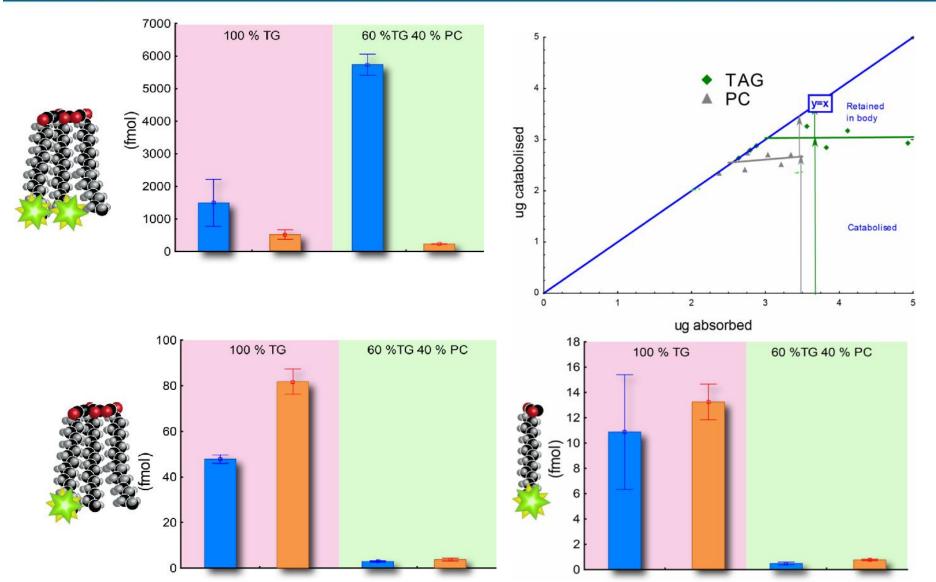
NIFES





## Feeding trials

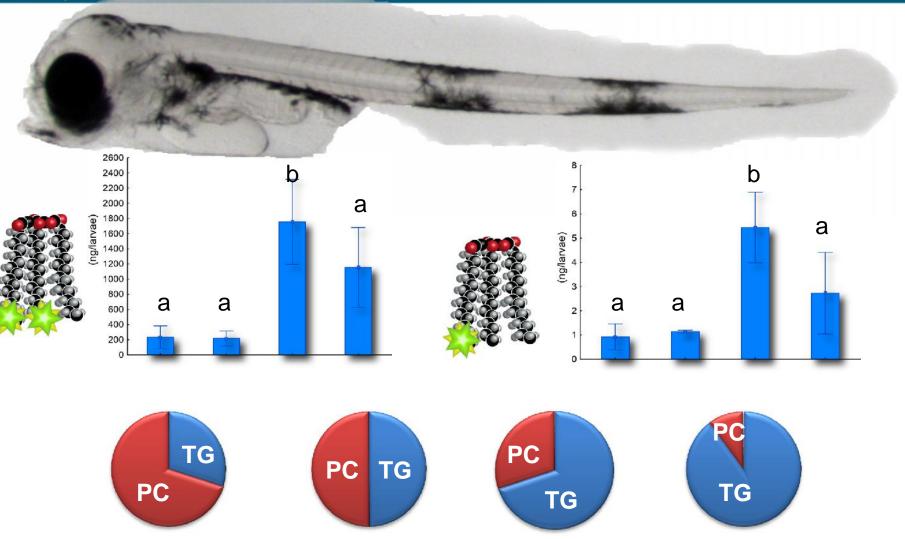
NIFES



## Atlantic cod larvae

NIFES

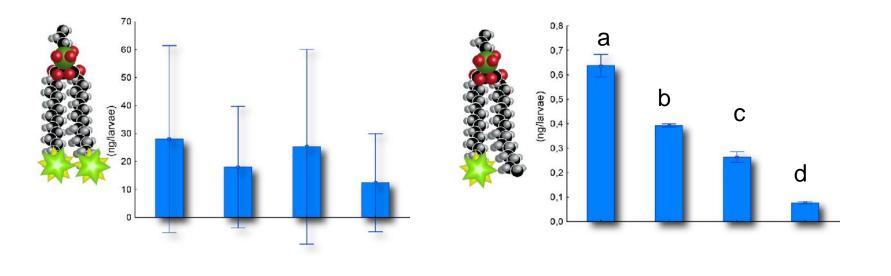






## Atlantic cod larvae

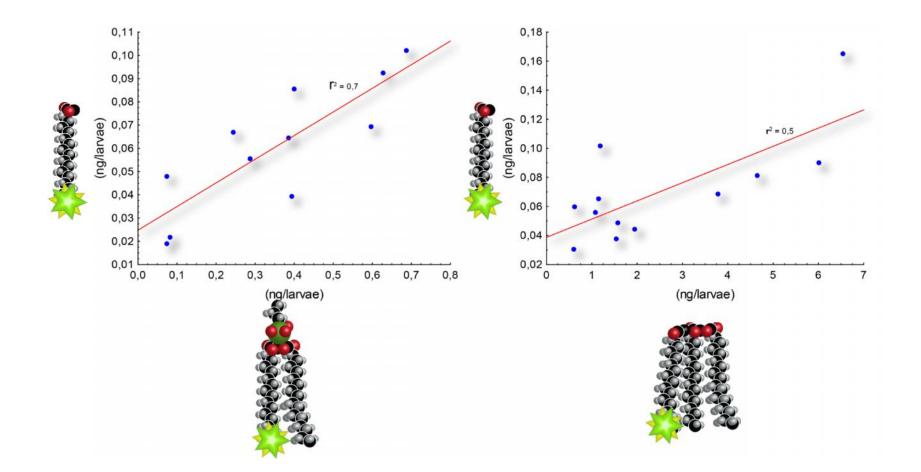
NIFES



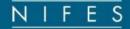








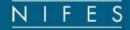




# ✓Chemicals that affect lipid digestion

- $\checkmark$ Genes that affect lipid digestion
- ✓ How nutrient composition affectlipid metabolism





# Thank you

This work has been financed by the Norwegian Research Council project: CODE.

We would like to thank Avanti Polar Lipids, Inc (USA) for donating the TopFluor lipids

