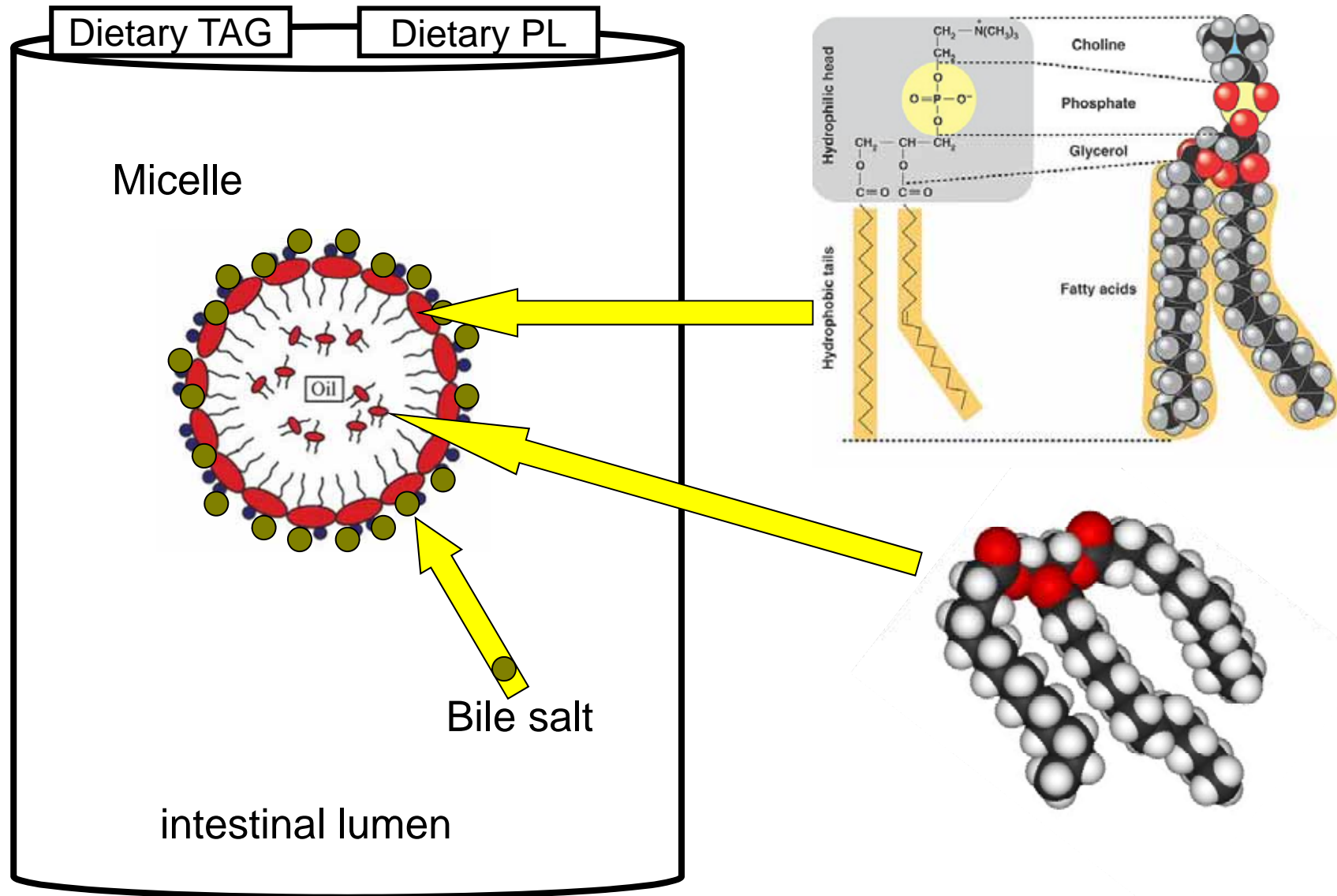


# ONTOGENY OF LIPID DIGESTION IN ATLANTIC COD (*GADUS MORHUA*) LARVAE

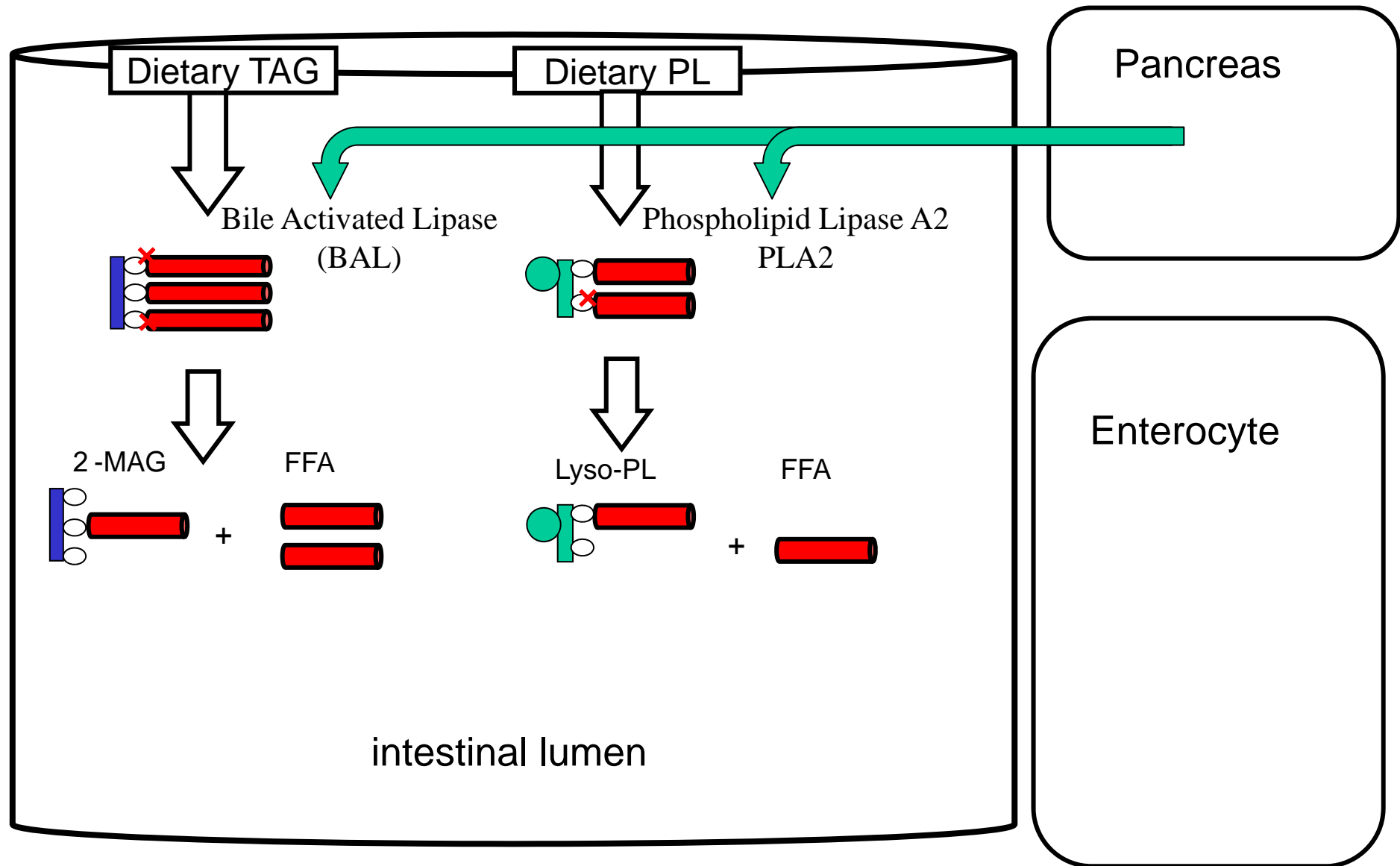
Ø. Sæle, A. Nordgreen, P. Olsvik, and K. Hamre

NIFES, National Institute of Nutrition and Seafood Research  
Bergen - Norway

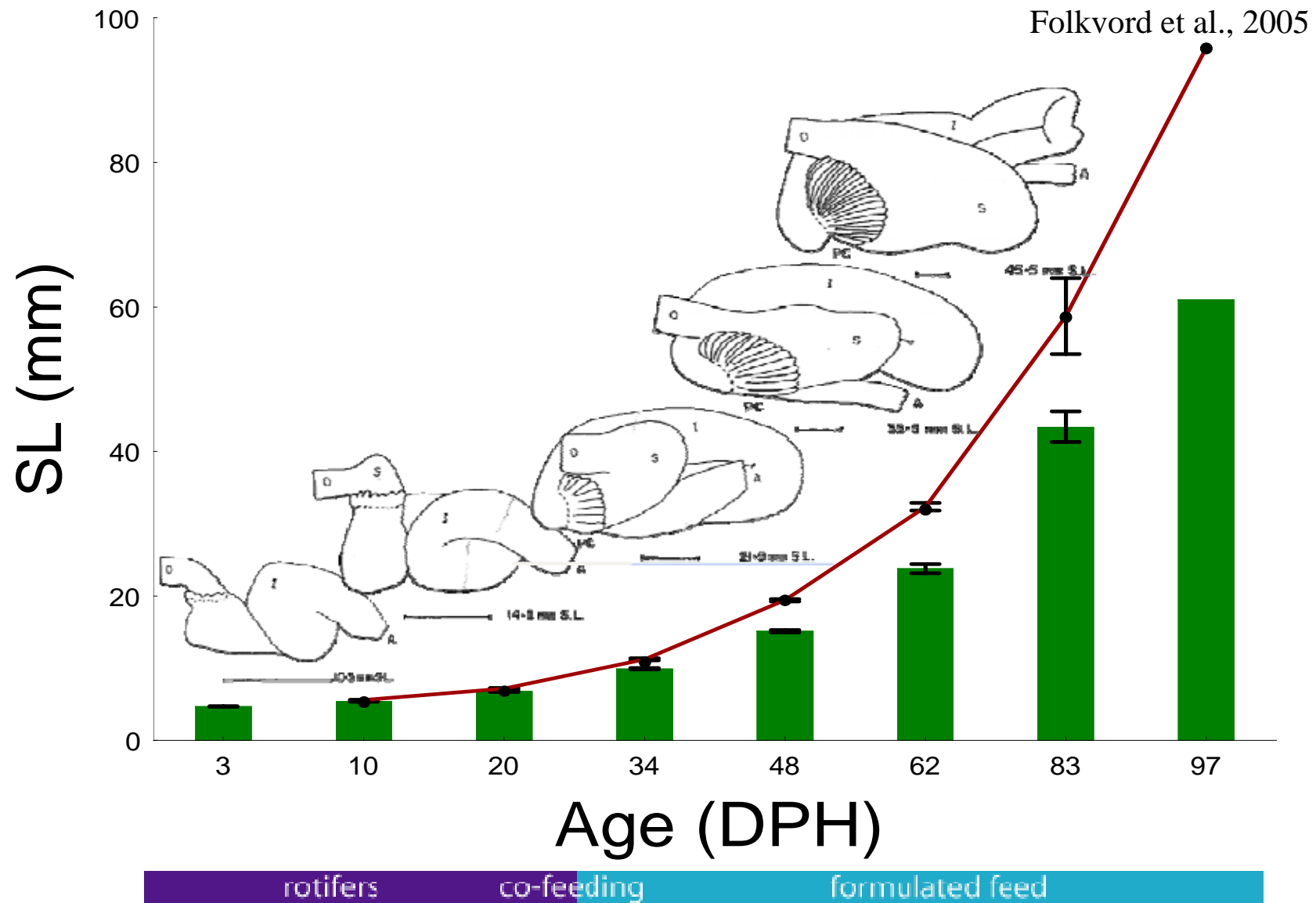
# Lipid digestion



# Lipid digestion



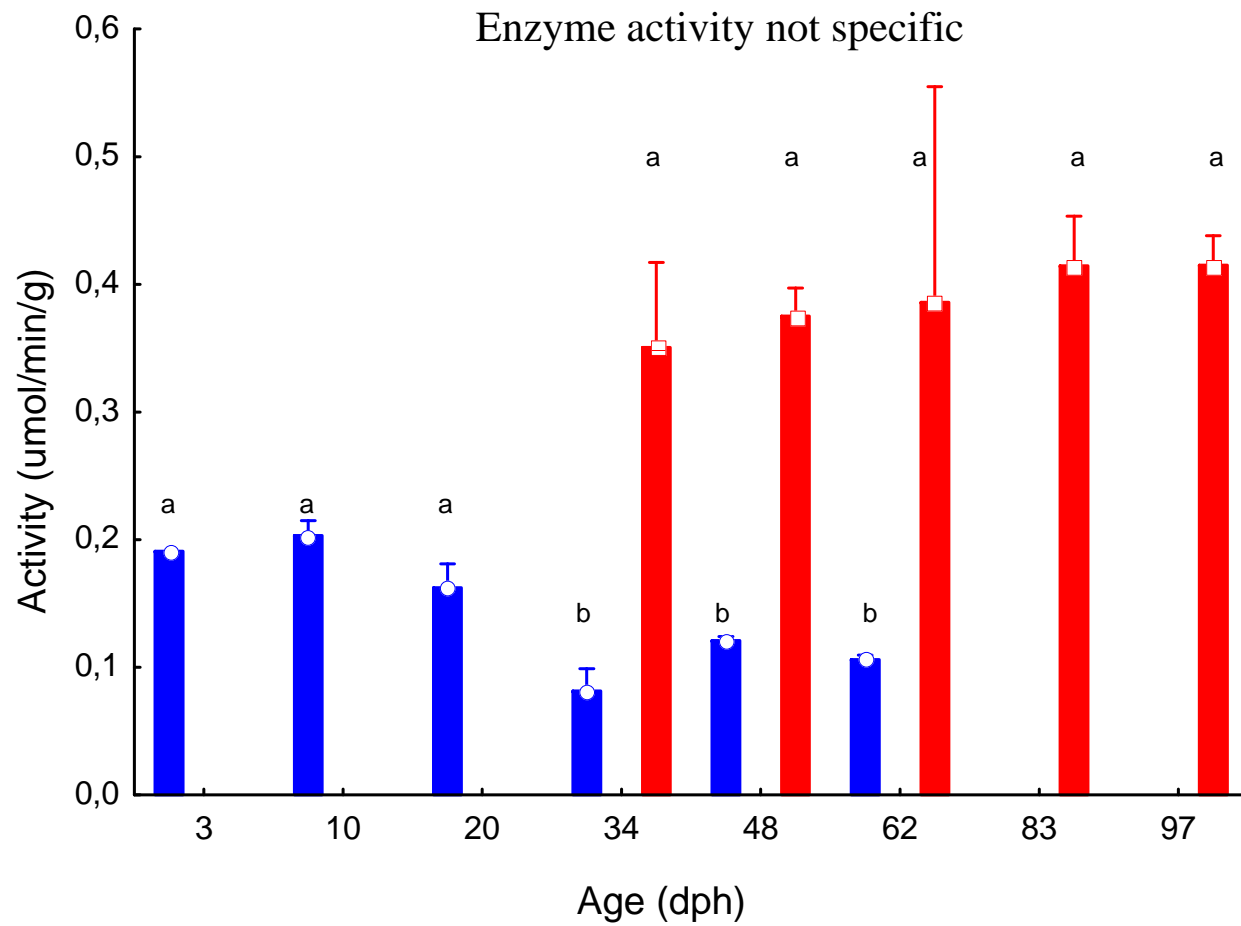
# Growth and ontogeny of GI tract



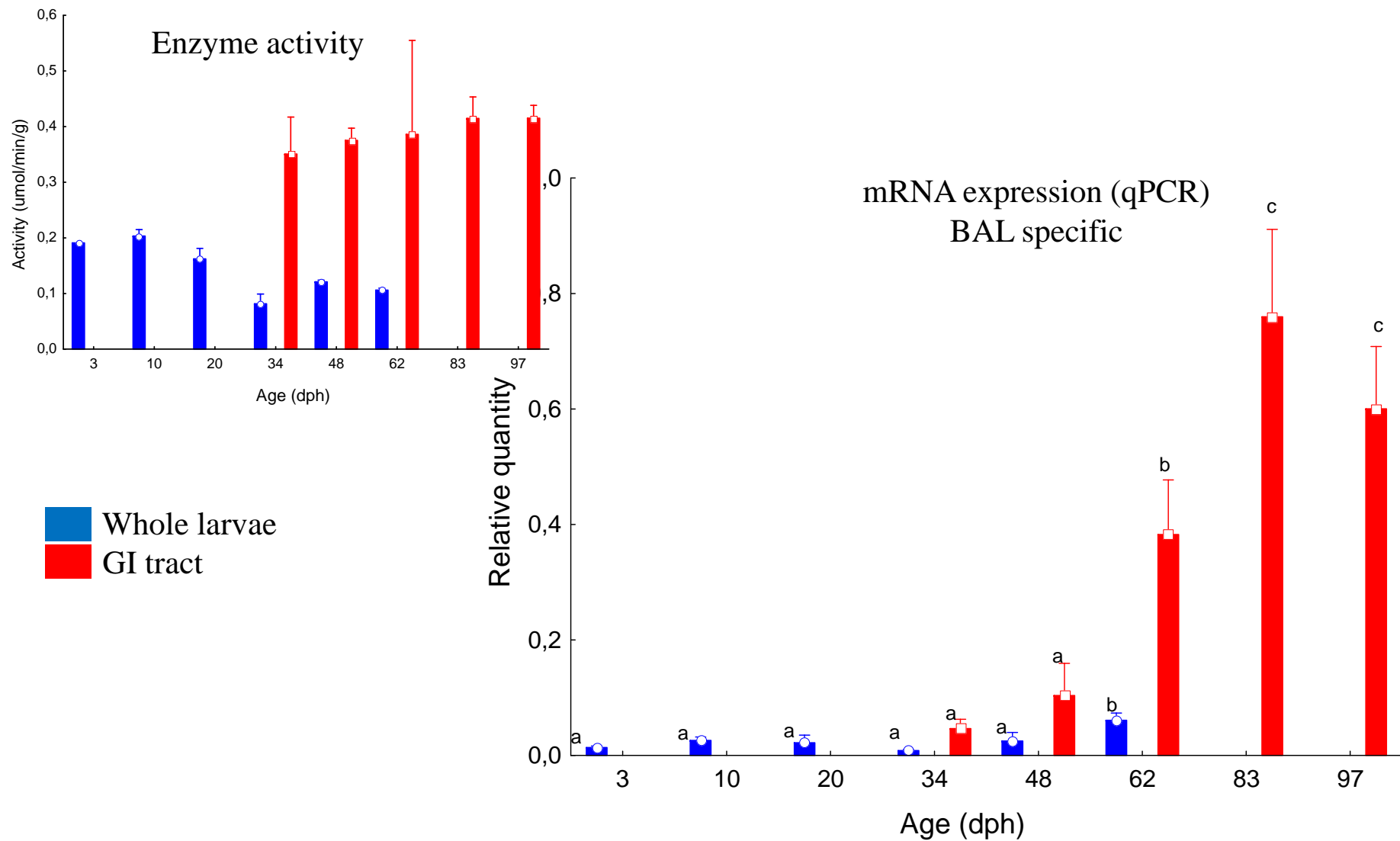


# Total lipase activity

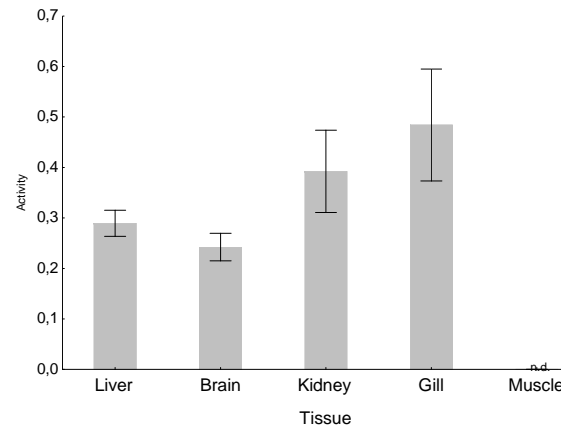
- Whole larvae
- GI tract



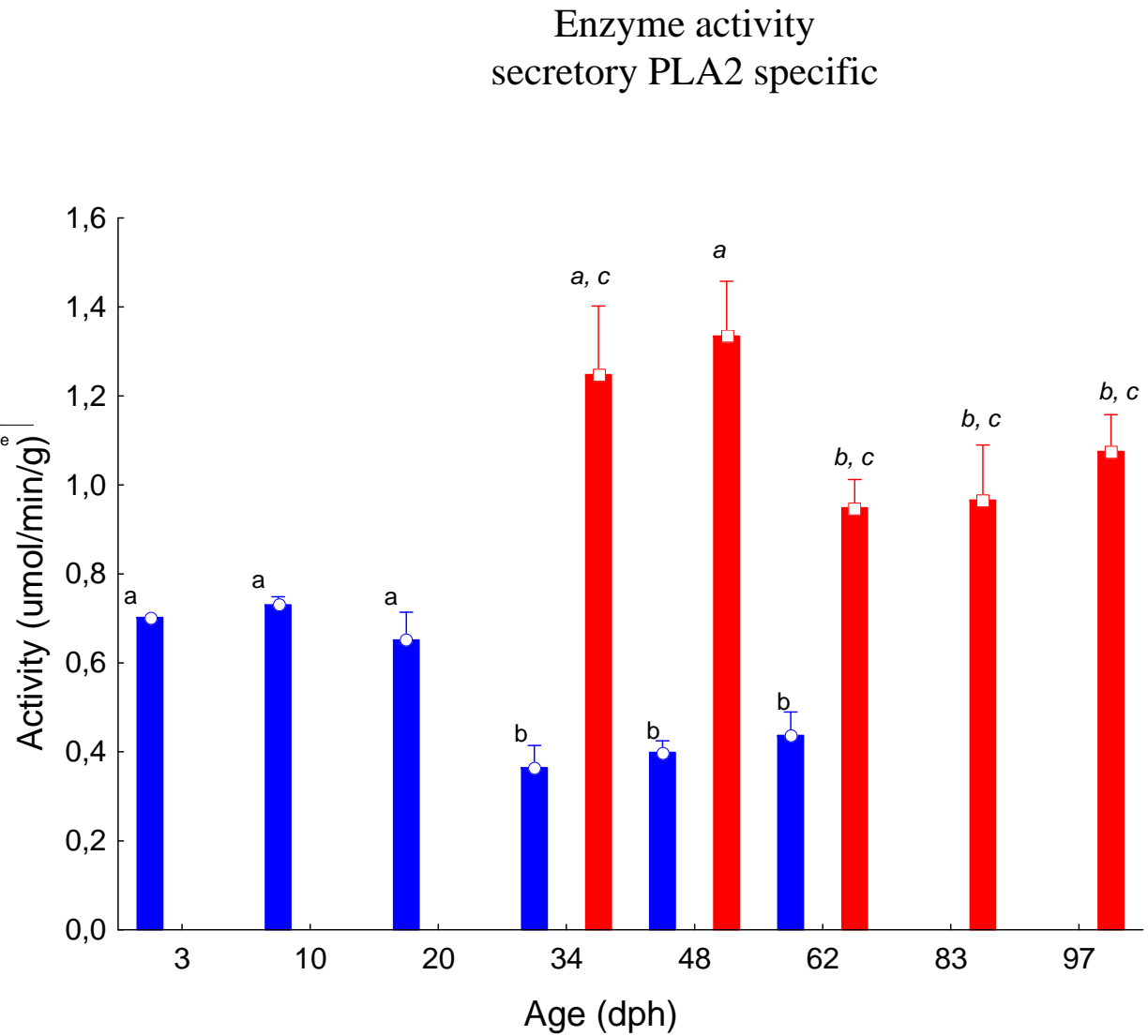
# Bile activated lipase mRNA



# Phospholipase A2 activity

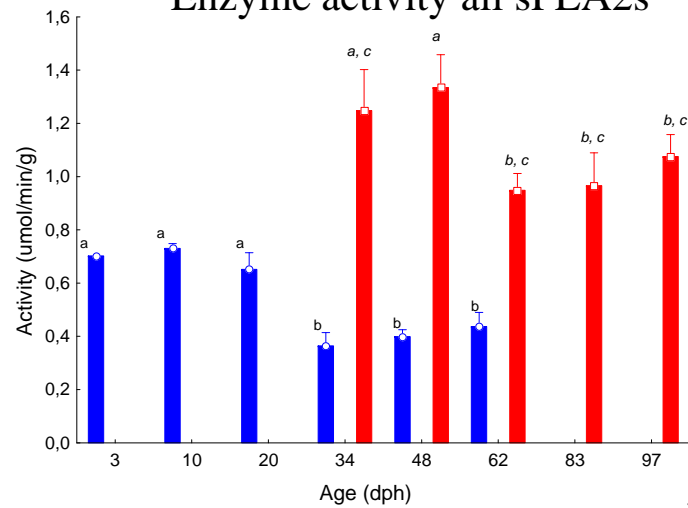


Whole larvae  
GI tract



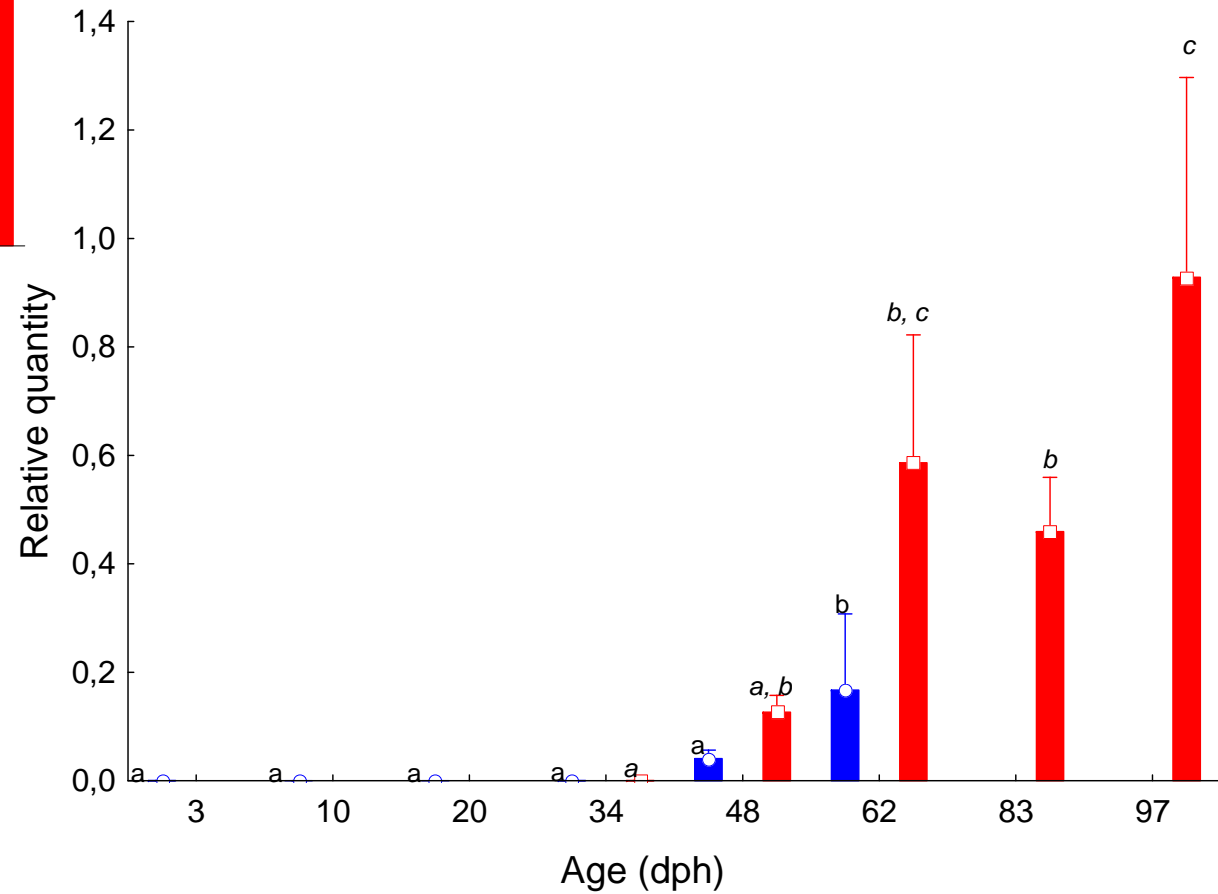
# Phospholipase A2 - IB mRNA

Enzyme activity all sPLA2s



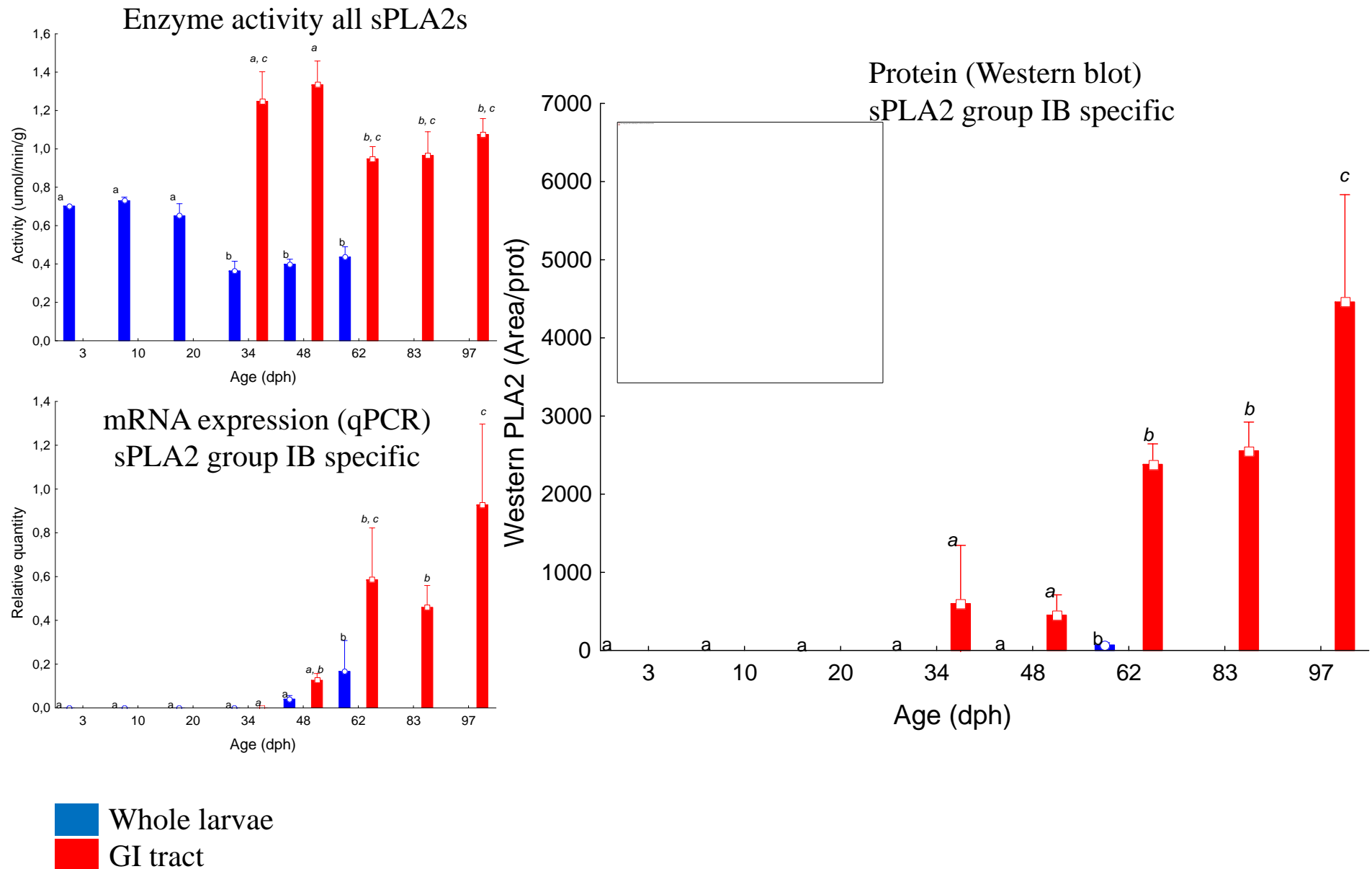
Whole larvae  
GI tract

mRNA expression (qPCR)  
sPLA2 group IB specific

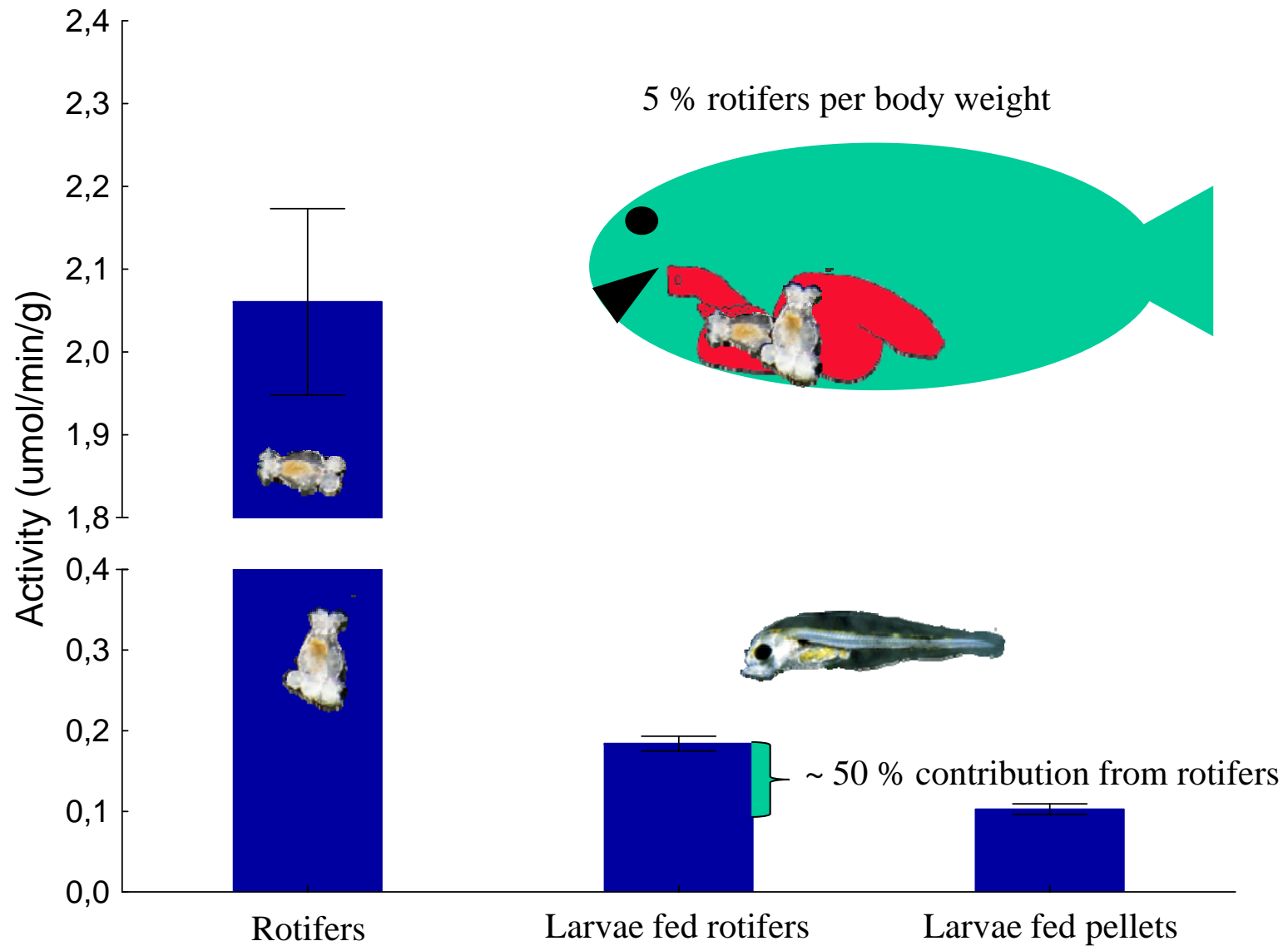




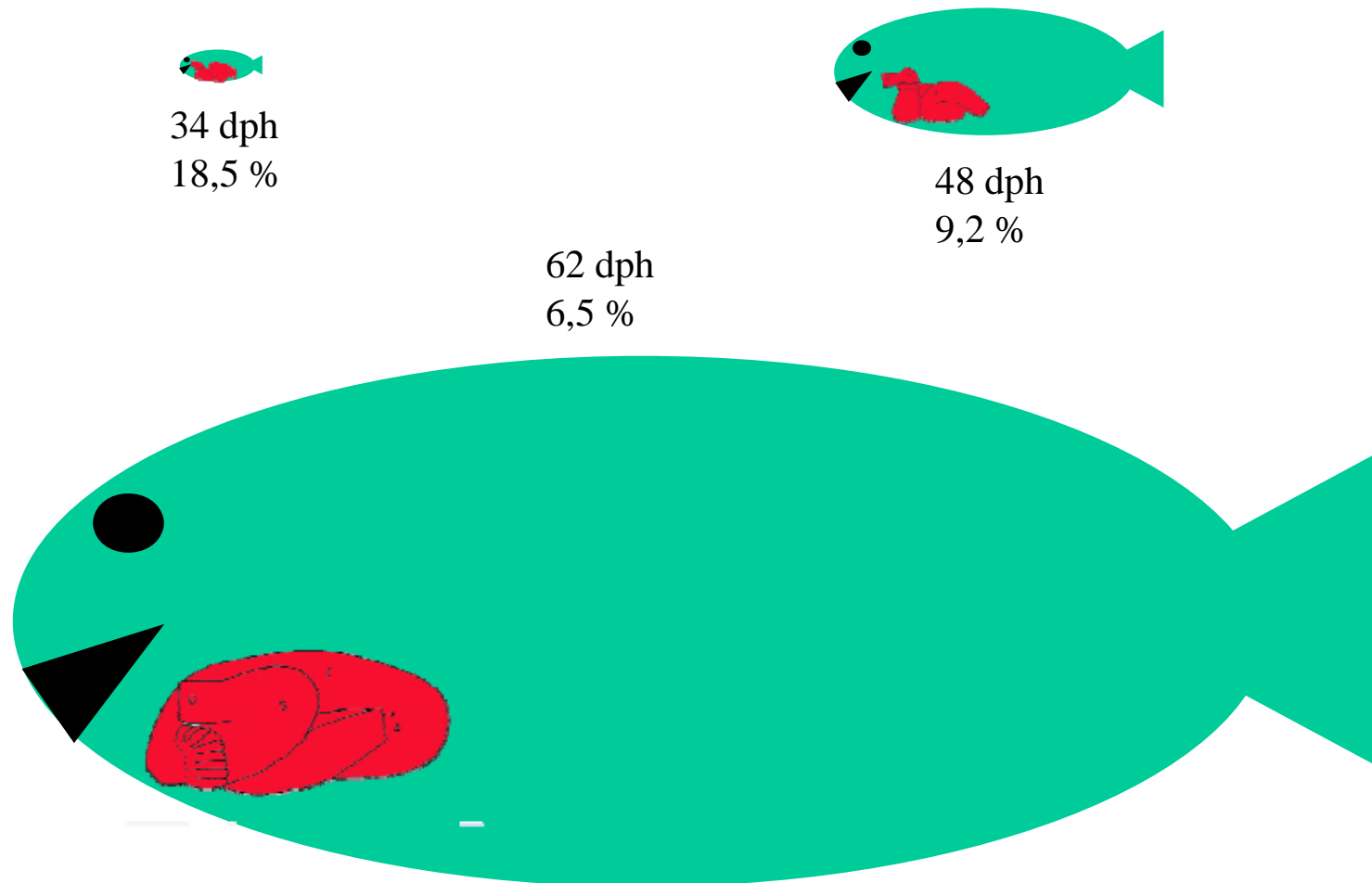
# Phospholipase A2 protein



# Total lipase activity - contribution from prey N I F E S



# Metabolic scaling - Body and GI tract

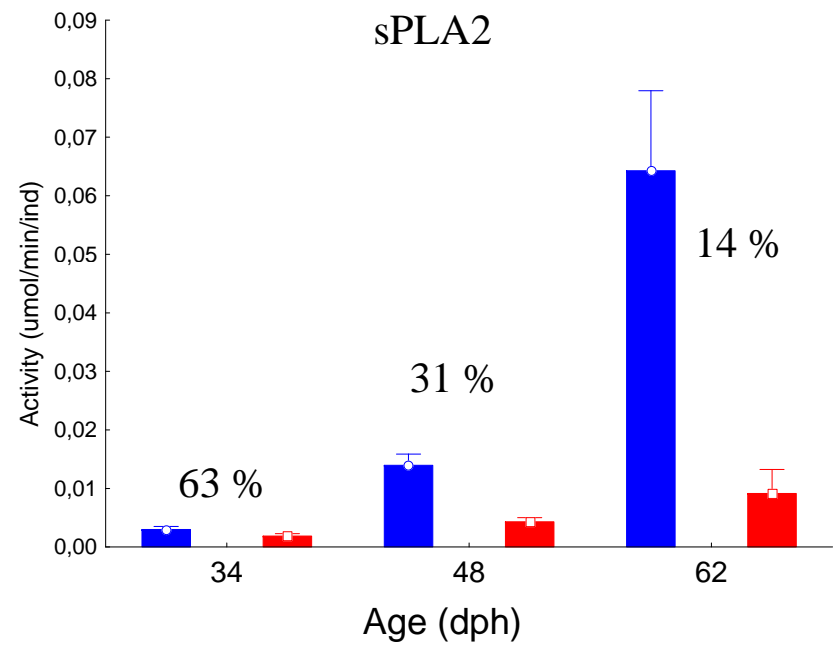
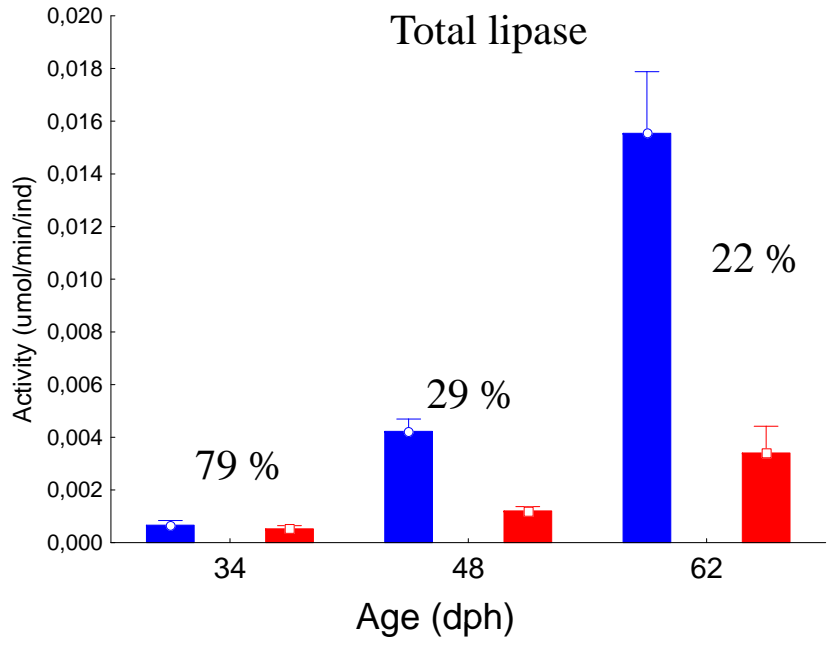




# Enzymatic activity per individual

- Whole larvae
- GI tract

Activity in whole larva vs. GI tract





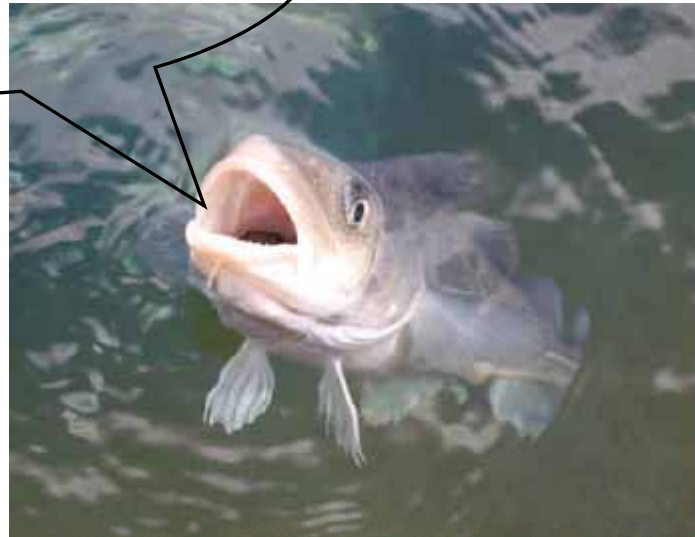
High correlation between BAL and sPLA2 IB production

Significant increase in production at ~ 20 mm SL (~50 dph)

Contribution of lipase activity from live prey is probably of importance

Enzyme activity assays are not specific and  
metabolic scaling of organs involved in digestion should be corrected for

**Thank you for  
your attention**



This work is a part of the RCN financed project: Ontogeny of lipid digestion and effects of feeding predigested lipids to Atlantic cod (*Gadus morhua*) larvae