

Project information

Project title

Epigenetic effects of oil pollutants in polar cod and Atlantic cod – EPITOX

Year

2015

Project leader

Øivind Andersen

Participants

Marianne Frantzen, Hanne Johnsen, Jenny Bytingsvik, Velmurugu Puvanendran

Flagship

Hazardous Substances

Funding Source

FRAM

Summary of Results

To examine short- and longterm effects of oil exposure at early developmental stages, Atlantic cod embryos at the eyed stage were exposed to chemically dispersed naphthenic crude oil at two sublethal dosages for 24 hours. Eggs were sampled prior to hatching and at two larval stages for studying alteration in gene expression patterns and epigenetic changes using RNAseq and RRBS (genome-wide DNA methylation analysis), respectively. RNA and DNA have been extracted from hatched larvae and will be sent for RNAseq and RRBS within the coming weeks.

Published Results/Planned Publications

Results from this preliminary study will be published together together with a similar epigenetic study on temperature stress in early developmental cod.

Communicated Results

The project has been presented at internal meetings for planned studies financed by the Norwegian Research Council.

Interdisciplinary Cooperation

Cod genome sequences and bioinformatic tools are needed for RNAseq and whole-genome methylation analyses. We therefore have close collaboration with relevant researchers at NMBU and Nofima.

Budget in accordance to results

RNAseq and RRBC analyses are highly expensive, but the project money will cover all costs.

Could results from the project be subject for any commercial utilization

No

Conclusions

We have to wait for the results before concluding.