Project information

Keywords
Trapha 2
Project title
Transformation properties and environmental risk associated with pharmaceutical residues in the Arctic
Year
2016
Project leader
Roland Kallenborn
Geographical localization of the research project in decimal degrees (max 5 per project, ex. 70,662°N and 23,707°E)
70,662°N and 23,707°E
Participants

Anuschka Polder, Jan L. Lyche (NMBU/MatInf); Nicholas Warner, Vladimir Nikiforov, Dorte Herzke, (NILU, Tromsø); Terje Vasskog (NORUT, UiT); Geir W. Gabrielsen, Heli Routti (NPI); Anita Evenset & Guttorm Christensen (APN); Zoya Zhakovskaya, Yana Russkikh, Ekaterina Chernova (SRCES RAS, St.Petersburg, Russia).

Flagship
Hazardous Substances
Funding Source

FRAM Flaggship program, AMAP

Summary of Results

In the 2. Stage of the TRAPHA project, the previously developed analytical method is extended and applied for benthic seawater and benthic biological samples. The list of PPCP compounds has been extended to 25 priority compounds to be analysed and quantified both in aqueous and biota samples.

The method optimization was performed in close collaboration with NMBU-MatInf (Dr. Helene Thorsen Rønning) and NORUT (Dr. Terje Vasskog). The method optimization and the subsequent application is a part of an ongoing Master of Science (MSc) Thesis in Chemistry (Julie Strømberg) to be delivered in May 2017. After a complete method validation, the field work was performed in Tromsø (October 2016) at the sewage outlet of the Breivika Campus of the University Hospital (UNN).The first preliminary results after for qualitative analyses indicate medium to high level contamination in the receiving sea water. The biota samples are currently prepared for quantitative analysis.

Master and PhD-students involved in the project

Julie Strømberg (2016): Pharmaceuticals and Personla Care Products (PPCPs) in North Norwegian coastal environments (seawater & biota)

Published Results/Planned Publications

Presentations:

Kallenborn, Roland.

Identification and characterization of pollutants of emerging concern in the Arctic environment: Pharmaceuticals and Personal Care Products. Sino- Norwegian Workshop on Arctic Pollution; 2016-05-07 - 2016-05-09

Kallenborn, Roland.

Pharmaceutical and personal care products in Arctic Environments: A first review. ARTEK 2016: Sanitation in Cold Climate Regions; 2016-04-12 - 2016-04

Communicated Results

No changes since reporting 032016

Interdisciplinary Cooperation

Collavboration between Akvaplan-Niva, NILU, NPI and NORUT ensured a good interdisciplinary working platform for the project

Budget in accordance to results

Budget in accordance to the results

Could results from the project be subject for any commercial utilization

No

If Yes

No commerial utilisation expected

Conclusions

High Lights:

Analytical method extended and optimized; PPCP found in Tromsøsund seawater samples; Biota samples (Fish) are currently prepared for analysis

During the second year of the project period, the basic method establishment was extended and further optimized including now also marine biota. main goal. The method is ow covering 25 relevant PPCP compounds for quantification and identification. Field work for collecting marine biota and seawater was conducted by MSc student Julie Strømberg in October 2016. First preliminary results indicate medium to high level PPCP contamination in Sea water from the Breivika harbor (Tromsø). The TraPha initiative is based upon a strong educational foundation, where the scientific work is framed as masters (MSc) project in chemistry at NMBU/ IKBM (60 ECTS). Two MSc projects were completed as project contribution at NMBU/IKBM This allows a close

linkage between research work and the educational aspects of the project.