



# Polycyclic Aromatic Hydrocarbons in Mussel from Iceland

PAH compounds in mussel from the Icelandic coastline the last two decades

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**Background:** Polycyclic aromatic hydrocarbons (PAH) are a group of compounds that are composed of fused aromatic rings formed through the combustion of organic matter. The major source of PAH release to the environment is through human activities but it can also be from natural sources. The health concerns associated with PAHs stem from their carcinogenic and mutagenic effects. The major routes of human exposure are through breathing air and consumption of food that contains PAHs. Monitoring of PAHs in food is important both from environmental and food safety point of view. Therefore sixteen PAHs have been determined to be priority pollutants by the USA Environmental Protection Agency. These 16 PAHs are commonly used in monitoring projects to gather information and assess the status of food products regarding undesirable substances.

**Aim:** The aim of the project was to analyse and quantify the priority polycyclic aromatic hydrocarbons in blue mussel collected over the last two decades at three locations, Úlfsá Skutlusfirði, Brekka in Mjóifjörður and Hvassahraun in Hafnafjörður, as part of a monitoring program of the marine biosphere around Iceland. The locations are shown on the figure

**Method:** Analysis and quantification in blue mussel was performed using microwave-assisted extraction and solid phase extraction clean up followed by gas chromatography coupled to mass spectrometry (GC-MS) to detect and quantify the PAH compounds.

**Results:** Preliminary results indicate that in Hvassahraun and Úlfsá, the concentration of PAHs is low. While, in Mjóifjörður the concentration is relatively high compared to the other two locations. There was a big increase in the concentration around the year 2000 and has remained high since.

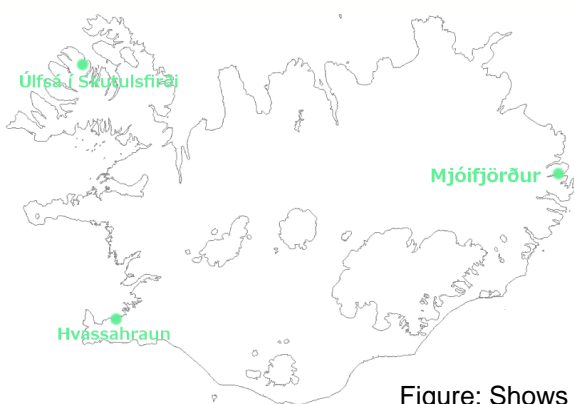


Figure: Shows the sample locations

