

Quant Array Petro®

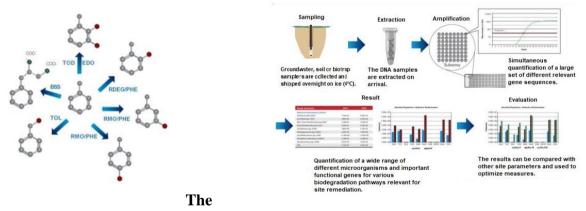
QuantArrayPetro[®] is a molecular biological assay that simultaneously quantifies individual microbial species and functional genes for aerobic, cometabolic, and anaerobic microbial degradation of petroleumhydrocarbons such as BTEX, MTBE, toluene, ethylbenzene, benzene, xylene, or naphthalene in one single analysis.

A comprehensive assessment of biodegradation potential at mineral oil contaminated sites is always problematic due to two factors:

1. Petroleum hydrocarbons are complex mixtures of hundreds of aliphatic, aromatic, cyclic, and heterocyclic compounds.

2. Even for common pollutants such as BTEX (Benzene, toluene, ethylbenzene, xylene) biodegradation can occur through a variety of pathways. For example, biodegradation of toluene can occur via five known aerobic pathways and one known anaerobic pathway.

QuantArrayPetro[®] solves both of these problems by enabling simultaneous quantification of the specific functional genes responsible for aerobic and anaerobic biodegradation of BTEX, PAHs, and a variety of short and long chain alkanes.



array includes analyses for:

•Benzene/toluene dioxygenases (TOD), monooxygenases (RMO, RDEG, PHE) and other functional genes for the aerobic degradation of BTEX

•MTBE metabolizer Methylibium petroleiphilum PM1 and the TBA monooxygenase

•Benzyl succinate synthase (BSS) for the anaerobic degradation of toluene, ethylbenzene and xylene

•Benzene carboxylase (ABC) for the anaerobic degradation of benzene

•Naphthalene dioxygenase genes (NAH, NAG, PHN) for aerobic degradation

•Naphthylmethylsuccinate synthase (NMS) for the anaerobic degradation of methylated naphthalene

•Naphthalene carboxylase (ANC) for the anaerobic degradation of naphthalene

•Alkane monooxygenase genes (alkB)

•Alkylsuccinate synthase (assA) for the anaerobic degradation of alkanes

QuantArrayPetro[®] enables economical potential analysis for biodegradation of a full spectrum of petroleum hydrocarbons and their variety of aerobic and anaerobic pathways to receive a comprehensive overview of the biodegradation processes.

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