

MIDTAL MICROARRAYS FOR THE DETECTION OF HARMFUL ALGAE: A COMMERCIAL REALITY AND μ AQUA NOT FAR BEHIND FOR DIATOMS IN ASSESSING WATER QUALITY

Linda K. Medlin

Marine Biological Association of the UK

In the EU FP7 project MIDTAL (microarrays for the detection of toxic algae), we targeted rapid species identification using rRNA genes to generate “barcodes” specific for probe design to recognize species or even strains. A toxin-based microarray includes antibody reactions to specific toxins produced by these microalgae because even when cell numbers are low, toxins can be present and can accumulate in the shellfish. Microarrays are the state of the art technology in molecular biology for the processing of bulk samples for detection of target RNA/DNA sequence. Probes for *Pseudo-nitzschia* were particularly challenging because of the low variation in the LSU making it impossible to design probes for only one species. The project is finished, with a published manual and patents applied for the microarray and commercial contacts are established to make a kit, with estimated costs of about 40€ per sample with two pseudo-replicates. μ AQUA is another EU FP7 project that involves making microarrays for freshwater pathogens (bacteria, viruses, cyanobacteria and their toxins). Diatoms are included in this project as a measure of water quality.