

Bachelor thesis by Fynn Hackstein, RWTH Aachen

Method Development for sensitive Determination of Antibiotics in Seawater Samples using LC/MS

Abstract

The development of a LC/MS method for the determination of Avilamycin, Chlortetracycline, Erythromycin, Furazolidone, Malachite Green and Leucomalachite Green is presented. It starts off with isocratic measurements and ends using gradient profiles that are able to measure all six compounds simultaneously. The limit of quantification (LOQ) using LC/MS ESI ranged from 0.02 ng/ μ L for Malachite green to 11.1 ng/ μ L for Furazolidone. On top of LC/MS, HPLC UV/VIS detection was used to receive additional information about the possibilities of determination of the given antibiotics. Furthermore a lot of effort was put into describing the difficulties that were faced during the development of this work, regarding both chemical and technical issues.