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## Molecular Biotechnology Programme

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| <b>UPTEC X 09 028</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Date of issue 2009-05</b>                      |                                                     |
| Author<br><b>David Wessling</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                   |                                                     |
| Title (English)<br><b>Distribution and binding of a biocide in marine antifouling coating</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                   |                                                     |
| Title (Swedish)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                   |                                                     |
| Abstract<br><p>In this report we show the impact of certain solvents on the microscopic distribution of a fluorescent Biocide (Ivermectin) within an anti-fouling coatings layer. Furthermore, the degree of emission of Ivermectin from the surface was determined with the use of fluorescent derivatized Ivermectin. The results of such emission experiments were uncertain probably due to readsorption of Ivermectin to the coatings layer or to the surface of the equipments. The elutable (water-soluble) toxicity of the Ivermectin-containing coatings was also investigated with a Bioassay based on Brine shrimp (<i>Artemia salina</i>). We found that the apparent low toxicity of the elution water could partly be explained by toxic inactivation of Ivermectin with Abietic acid, a binder component in the coating.</p> |                                                   |                                                     |
| Keywords<br>Marine fouling, Biocide, Toxicity, Coating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                   |                                                     |
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