TECHNOLOGY OFFER

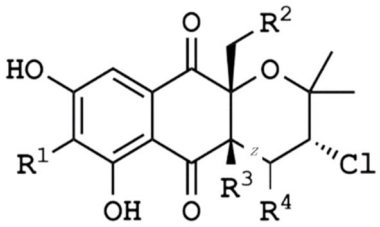
NAPYRADIOMYCINS AS ANTIFOULING AGENTS

Background

Marine biofouling is a significant problem for the maritime industry resulting in severe prevention and maintenance costs (billions €/year) for aquaculture, shipping and other industries that rely on coastal and off-shore infrastructures.
In addition, fouling in vessels is the main cause of the propagation of non-indigenous marine species into ecosystems. In the past years, research efforts have been directed at finding additives with antifouling properties that are effective, sustainable and economically viable.

Technology

The technology refers to the napyradiomycins family of compounds, as antifouling agents. Napyradiomycins prevent the fouling of both marine micro and macroorganisms, such as bacteria, barnacles, mussels, and algae among others. The compounds do not introduce toxic effects on organisms and present reduced environmental toxicity.
Napyradiomycins are fermentation products derived from actinobacteria of the genus *Streptomyces* known for their antimicrobial and anticancer activities. The compounds can be added to building material, including paints, varnishes, primers and seals, to treat surfaces in contact with water, targeting the primary attachment phases of the fouling process, preventing the accumulation of other marine species.



Advantages

- Inhibition of the settlement of a broad range of marine fouling species;
- Napyradiomycins can be used as stand-alone agents, or in combination with other active ingredients or biocides;
- Natural product with biodegradable properties.

PATENT STATUS

Portuguese Patent Application via INPI PT115055
Priority date: 04.10.2018
Granted in Portugal

DEVELOPMENT STAGE

TRL4 – Technology validated in lab

APPLICATIONS

Antifouling additive (in free-form or encapsulated) for surfaces submerged in water

COOPERATION

Research Cooperation Agreement;
Product development and marketability;
Licensing Agreement.

KEYWORDS

Napyradiomycins
Actinomycetes
Antifouling
Marine natural products

DEVELOPED BY

CIIMAR - Centro Interdisciplinar de Investigação Marinha e Ambiental;
Universidade Nova de Lisboa;
Instituto Politécnico de Setúbal.

techtransfer@ciimar.up.pt