

MEDIA RELEASE



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Say NO to Slime

Biotechnologists developing cheap and novel ways to get rid of biofilms in water and marine industries

The slime on your backyard pool, the plaque on your teeth, the build up on the bottom of your boat...these are all types of biofilms.

Biofilms are groups of organised bacteria that build complex structures to protect themselves from attack. Biofilms are found everywhere. They are reservoirs for diseases in water systems and they cause fouling and corrosion in water and sewage pipes.

These problems lead to significant increases in costs for many industries, including marine and water and sewage companies. Costs to industry for removing biofilms runs into billions of dollars annually.

One of the main problems with controlling biofilms is that they are highly resistant to conventional treatments which are usually chemicals designed to kill the organisms such as biocides and antibiotics.

In the form of biofilms, bacteria are defensive colonies that protect the individual bacteria. The chemicals we use to get rid of biofilms can barely touch them – no matter how toxic they are.

Scientists working at the EBCRC may hold the secret to this problem with new knowledge about how biofilms breakdown naturally.

“Bacteria in biofilms disperse and reform when they reach a mature stage of development or when they are under attack,” said Prof. Staffan Kjelleberg, EBCRC project leader based at University of NSW.

“When they disperse, they are very vulnerable to attack by bactericides, chemicals and other organism that live off the bacteria, such as zoo plankton”.

“We have found a way to trick the bacteria into not re-forming into biofilms. We do this using extremely low concentration of a specific chemical – Nitric Oxide (NO).”

“The effect of this appears to stimulate cells dying and others to disperse so that the biofilms break-up very rapidly – a low cost and environmentally-friendly solution to biofilm control.”

This technology is expected to generate huge savings for industries that suffer from biofilm related problems, for example by reducing the need for high concentrations of toxic antimicrobial compounds.

Further information, fact sheets and photos can be obtained from EBCRC phone 02-9209 4969. For interview: Prof. Staffan Kjelleberg 0403 218 025