

# Cholesterol-busting bug with a taste for waste

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A novel species of bacteria with cholesterol-busting properties has been discovered by scientists at the Universidad Complutense de Madrid, Spain. Dr Oliver Drzyzga and colleagues isolated the new bug, called *Gordonia cholesterolivorans*, from sewage sludge. Their findings are reported in the current issue of the *International Journal of Systematic and Evolutionary Microbiology*.

A steroid found in all body tissues, [cholesterol](#) is used in the cosmetics and pharmaceutical industries as stabilizer, emollient and water-binding agent. As a consequence, steroids - including cholesterol - are a major group of contaminants in urban sewage residues.

*Gordonia* [bacteria](#) have only been classed as a separate group of bacteria since 1997 but they have already proved useful as they are able to degrade a wide range of environmental pollutants including phthalates (used in plastics), rubber and hazardous compounds such as the explosive hexogen (cyclotrimethylenetrinitramine). *Gordonia cholesterolivorans*' ability to break down cholesterol means that it could be used to clean up contamination.

Dr Drzyzga and co-workers are studying the genetics of this novel bacterium to genetically modify strains that might also be used to synthesise new and industrially useful breakdown products of cholesterol.

"New steroid compounds made by these [bacteria](#) may find applications

in the pharmaceutical and medical sectors in the future, but as some *Gordonia* species are pathogenic to humans it is unlikely that they could be used directly to treat high cholesterol-related conditions in humans", said Dr Drzyzga.

"We are trying to work out exactly how *Gordonia cholesterolivorans* metabolises cholesterol so that we can identify and construct metabolically engineered strains that are more rapid and effective in breaking down cholesterol."

Source: Society for General Microbiology

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