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BACTERIA FEED ON SMELLY BREATH (AND FEET)
Recently published in "[Environmental Microbiology](#)", August 2005

Researchers have isolated bacteria which can grow on and 'mop up' smelly compounds in the mouth that are linked to bad breath. These smelly, highly reactive 'one-carbon' compounds are naturally produced from the breakdown of sulphur-containing amino acids in the mouth.

Dr Ann Wood and her colleagues at Kings College, London, reported these findings in the August issue of 'Environmental Microbiology'. The odour-eating methylotrophic bacteria were isolated from the tongue, tooth plaques (supra-gingival plaques) and gum edge (sub-gingival plaques) of volunteers. They include strains of *Bacillus*, *Brevibacterium casei*, *Hyphomicrobium sulfonivorans*¹, *Methylobacterium*, *Micrococcus luteus* and *Variovorax paradoxus*.

The composition and function of bacterial flora of the mouth have been extensively studied in the past, but until now it was not recognised that methylotrophic bacteria are part of the normal oral microbial environment or 'microflora'.

The researchers found no difference between strains of bacteria found in the mouths of healthy volunteers and those suffering from progressive gum disease (periodontitis), a condition which is often associated with smelly breath. However, no assessment was made of the levels of methylotrophic bacteria present, low levels of which may be associated with bad breath.

In a previous paper, Dr Wood *et al* found that the foot is also a source of methylated sulphides and strains of odour eating methylotrophic bacteria, including *Brevibacterium* and *Methylobacterium*. These bacteria were found to be part of the normal foot microbial flora³.

The results of this study will assist future investigation into the detection of the levels of methylotrophic bacteria and their possible relationship with the oral concentrations of methylated sulphides. This may lead to a natural way of reducing smelly breath and feet.

Notes to Editors:

1. An image of *H. sulfonivorans* and additional information are available on request from Lucy Mansfield at Blackwell publishing [Lucy.Mansfield@oxon.blackwellpublishing.com].
2. To view the full article, please follow these simple instructions:
 - A. Go to www.blackwell-synergy.com
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3. The previous paper by Wood *et al* is referenced: "Molecular detection and isolation of facultatively methylotrophic bacteria, including *Methylobacterium podarium* sp. nov., from the human foot microflora": Anesti *et al* (2004) *Environmental Microbiology*; 6(8):820-30.
4. If you would like to arrange an interview with the authors, please contact Dr Ann Wood, ann.p.wood@kcl.ac.uk.
5. *Environmental Microbiology* is published by Blackwells Publishing with the Society for Applied Microbiology. The journal is devoted to the study of microbial processes in the environment, microbial communities and microbial interactions.