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IN BRIEF

➤ METAGENOMICS**Multilocus sequence typing breathes life into a microbial metagenome**Mahenthiralingam, E. *et al. PLoS One* **1**, e17 (2006)

The end of 2006 saw the launch of *PloS One*, a new online-only, open-access journal from the Public Library of Science. The ~100 papers available at launch included a study by Eshwar Mahenthiralingam and colleagues which the authors say 'breathes life' into the *Burkholderia* SAR-1 sequence that was identified by Venter *et al.* in their 2004 Sargasso Sea metagenomics study. In this work, a near-complete *Burkholderia* genome scaffold was assembled, but it has been suggested that this sequence was a contaminant in the original dataset. Using multilocus sequence typing (MLST), Mahenthiralingam and colleagues were able to match cultivable *Burkholderia cepacia* complex clonal isolates from their strain collection to the *Burkholderia* SAR-1 sequence. Analysis of the growth of these isolates in conditions resembling seawater, coupled with consideration of the epidemiological background of each isolate, allowed the authors to confirm that *Burkholderia* SAR-1 is in fact a contaminant. This work illustrates the power of MLST, as matching cultivable isolates with a hypothetical metagenome would not have been possible with other typing methods.

➤ BACTERIAL PATHOGENESIS**Filamentation by *Escherichia coli* subverts innate defenses during urinary tract infection**Justice, S. J. *et al. Proc. Natl Acad. Sci. USA* **103**, 19884–19889 (2006)

Previous work from the Hultgren laboratory has suggested that uropathogenic *Escherichia coli* (UPEC) use filamentation to evade the host innate immune response. In a mouse infection model, UPEC pathogenesis was shown to involve a complex cascade of events comprising four main developmental phases, the last of which is filamentation. In a new paper in *Proceedings of the National Academy of Sciences USA*, Sheryl Justice and colleagues show that SulA, a cell-division inhibitor associated with the SOS response, is required for this filamentation step. Moreover, inactivation of SulA only reduced UPEC virulence in the presence of an intact Toll-like receptor 4, thereby confirming the authors' hypothesis that filamentation is an important component of UPEC subversion of host innate immunity.

➤ FOOD MICROBIOLOGY***Lactobacillus acidophilus* modulates intestinal pain and induces opioid and cannabinoid receptors**Rousseaux, C. *et al. Nature Med.* **13**, 35–37 (2007)

The use of probiotics has been associated with alleviating the abdominal symptoms of irritable bowel syndrome. Rousseaux *et al.* speculated that this could occur if the probiotic bacteria induced the expression of analgesic receptors on intestinal epithelial cells. They found that the *Lactobacillus acidophilus* NCFM strain induced the expression of both an opioid receptor (MOR1) and a cannabinoid receptor (CB2) in a human epithelial cell line. The effects of *L. acidophilus* on the perception of visceral pain *in vivo* were examined in a rat model in which the pain threshold can be measured by analysing colorectal distention. The authors found that the oral administration of the NCFM strain had an analgesic effect that was similar to the analgesic effect of morphine.