IN BRIEF

BACTERIAL PHYSIOLOGY

Aging and death in an organism that reproduces by morphologically symmetric division

Stewart, E. J. *et al. PloS Biol.* **3**, e45 (2005)

Most eukaryotes produce offspring that clearly differ from their parents, a phenomenon that can be used to monitor ageing. Although populations survive, individuals eventually die. In bacteria that divide asymmetrically, such as *Caulobacter crescentus*, offspring cells are smaller than parents, and ageing has been observed. Now, in *Escherichia coli*, which produces offspring cells that are identical to parent cells, careful microscopic studies have revealed that the cell that retains the 'old' pole (the parent) ages and eventually dies. Ageing *E. coli* cells have reduced growth rates, produce smaller offspring and eventually stop growing (interpreted as death). It seems that bacteria are probably mortal after all.

BIODEGRADATION

Metabolism of bismuth subsalicylate and intracellular accumulation of bismuth by *Fusarium* sp. strain b1

Dodge, A. G. & Wackett, L. P. *Appl. Environ. Microbiol.* **71**, 876–882 (2005)

Using enrichment techniques and an inoculum from activated sewage sludge, Dodge and Wackett identified a fungus that can grow using bismuth subsalicylate as its sole carbon source. Bismuth is the active ingredient in ulcer and gastrointestinal remedies (such as Pepto-Bismol) and is a metalloid element that requires detoxification. The filamentous fungus — identified as a *Fusarium* sp. on the basis of spore type and morphology — accumulated bismuth in cytoplasmic phosphate-rich granules and the authors speculate that complexing with phosphate might be a mechanism of bismuth tolerance.

FUNGAL GENETICS

Strains and strategies for large scale gene deletion studies of the diploid human fungal pathogen *Candida albicans*

Noble, S. M. & Johnson, A. D. *Eukaryot. Cell* **433**, 417–421 (2005)

The pathogenesis of *Candida albicans* infections, in common with many other fungal pathogens, is poorly understood. Although the genome of *C. albicans* has been sequenced, researchers are hampered by the use of the *URA3* auxotrophic marker to generate gene knockouts. *URA3* expression can affect *C. albicans* pathogenesis and its expression varies depending on chromosomal location. Now, Noble and Johnson have constructed a new set of reference strains using knockouts of alternative auxotrophic markers — *HIS1*, *LEU2* and *ARG4*. These strains are virulent in mice and have normal karyotypes. A set of accompanying plasmids faciliate rapid construction of gene knockouts using a fusion PCR technique, so within a year or two a genome-disruption library could be available for this pathogen.