a distribution of ancestral nucleotides that was indicative of genetic isolation by distance, as previously reported for humans.

H. pylori isolates from recent-migrant populations (e.g. white individuals and African Americans from the US) and isolates suspected to result from horizontal transmission between ethnically distinct groups were excluded from the data sets, to prevent confusion with historical migrations. Statistical measurements of genetic differentiation in the remaining isolates and in 783 autosomal microsatellite DNA sequences from modern humans revealed striking parallels. In populations of both organisms, genetic diversity decreases with geographic distance from east Africa (reflecting 'genetic bottlenecks' that populations have passed through since leaving their African origins), whereas genetic diversity between pairs of populations increases according to their geographic distance from each other.

Further simulations employed a framework previously used to model global human colonization, which indicated that *H. pylori* originated in east Africa 58,000 ± 3,500 years ago. The authors conclude, therefore, that *H. pylori* infected humans before their migration from Africa (~50,000–70,000 years ago) and has been closely associated with human populations ever since.

Original article Linz B *et al.* (2007) An African origin for the intimate association between humans and *Helicobacter pylori*. *Nature* **445:** 915–918

Rebamipide therapy shows promise for steroid-refractory ulcerative colitis

Furuta *et al.* have found that rebamipide enema therapy is safe and effective in patients with corticosteroid-refractory, active, distal ulcerative colitis. Corticosteroids are used to treat acute exacerbations of ulcerative colitis but prolonged treatment is associated with serious complications; the cytoprotective agent rebamipide was assessed because of its ability to promote mucosal healing.

In this prospective study, 20 patients (age range 18–74 years, 5 men) with active, distal ulcerative colitis who had received corticosteroids for >2 weeks without improvement (16 with left-sided colitis, 4 with pancolitis) were treated with rebamipide enemas twice a day for 3 weeks; patients also received prednisolone (20–40 mg daily) and 5-aminosalicylic acid (1.50–2.25 g daily). At 3 weeks, 16 patients (80%) were judged (by colonoscopy findings) to be responders, 11 (55%) of these had achieved clinical remission. No side effects were reported in any patient during the 3 week treatment period.

To assess immunological responses to rebamipide, rectal mucosal biopsies were obtained from patients before treatment and after 3 weeks. In responders (but not nonresponders), levels of the proinflammatory cytokine interleukin (IL)-1β had decreased by 3 weeks. Furthermore, imbalance in the ratio of IL-1 receptor antagonist:IL-1β, which is speculated to contribute to chronicity of intestinal inflammation, had improved in responders (but not nonresponders) after 3 weeks. In contrast to corticosteroid therapy, rebamipide treatment did not affect neutrophil infiltration. Indications that the mode of action of rebamipide might be distinct from that of corticosteroids hint at a complementary role for this therapy.

Original article Furuta R *et al.* (2007) Rebamipide enema therapy as a treatment for patients with active distal ulcerative colitis. *J Gastroenterol Hepatol* **22:** 261–267

Transplanted cord-blood cells phenotypically resemble functional hepatocytes

Umbilical cord blood is a good source of stem cells, which have previously been shown to become hepatocyte-like cells (HLCs) after transplantation into damaged livers. Kakinuma *et al*. have now extended this research: they used mouse models of transient and chronic liver damage to assess the potential of human cord-blood cells transplanted into damaged livers to develop characteristics of functional hepatocytes.

Immunostaining revealed the presence of cord-blood-derived HLCs in transiently damaged livers (these HLCs comprised ~0.1% of all mouse hepatocytes), while many more cord-blood-derived HLCs were detected in chronically damaged livers. Double immunostaining for the hepatocyte-related markers HepPar-1 and human albumin revealed that, in both liver-damage models, cord-blood-derived