



FIGURE 23.4. Mutator strains of *Escherichia coli* are at an advantage when reared in mouse guts. (A) A mutator strain ($mutS^-$) was compared with wild type ($mutS^+$); these differed in mutation rate by two orders of magnitude (S^- , S^+ in A). After 6 weeks in mouse guts, most strains retained their original mutation rates. However, clones with high mutation rates were isolated from two mice ($m1$, $m2$); these mutator strains arose from spontaneous $mutS^-$ mutations. Conversely, one mouse inoculated with $mutS^-$ bacteria contained clones that had evolved lower mutation rates ($m7$ in A). (B) The mutator strain ($mutS^-$) has a significant advantage in the early stages of infection.

23.4A,B, modified from Giraud A. et al., *Science* **291**: 2606–2608, © 2001 American Association for the Advancement of Science