

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Heterogeneous diversity of spacers within CRISPR MICHAEL DEEM, JIANKUI HE, Rice University — Clustered regularly interspaced short palindromic repeats (CRISPR) in bacterial and archaeal DNA have recently been shown to be a new type of anti-viral immune system in these organisms. We here study the diversity of spacers in CRISPR under selective pressure. We propose a population dynamics model that explains the biological observation that the leader-proximal end of CRISPR is more diversified and the leader-distal end of CRISPR is more conserved. This result is shown to be in agreement with recent experiments. Our results show that the CRISPR spacer structure is influenced by and provides a record of the viral challenges that bacteria face. 1) J. He and M. W. Deem, Phys. Rev. Lett. 105 (2010) 128102

Michael Deem
Rice University

Date submitted: 19 Nov 2010

Electronic form version 1.4