Optimization of the Solubility of HIV-1-Neutralizing Antibody 10E8 through Somatic Variation and Structure-Based Design.

Abstract

Extraordinary antibodies capable of near pan-neutralization of HIV-1 have been identified. One of the broadest is antibody 10E8, identified in 1996. Here we report an optimization of the expression and solubility of 10E8. We collected 120 variants through somatic variation, followed by structure-based design, of the framework 26 alterations in sequence and substantially improved solubility. Antibody 10E8v4 may be suitable for manufacturing.

IMPACTANCE: Antibody 10E8 could be used to prevent HIV-1 infection if manufactured and delivered economically.