SUPPLEMENTARY INFORMATION

Derivation of self-association constant.

To derive the exact self-association equation, we begin from the definition of the explicit definition of the dissociation constant that defines a monomer/dimer equilibrium in equation 1 (Meaning, the equation that defines the reaction of M + M ⇌ D). Here, we define M as monomer, D as Dimer, and K_S as the dissociation constant that defines this equilibrium.

$$K_S = \frac{[D-M]*[D-M]}{D} \qquad \text{equation (1)}$$

Rearranging leads to the quadratic equation in equation 2.

$$D^2 - (2M + K_S)D + M^2 = 0 \qquad \text{equation (2)}$$

Solving for the dimer, D, leads to the solution in equation 3.

$$D = \frac{(2M+K_S) - \sqrt{(2M+K_S)^2 - 4M^2}}{2} \qquad \text{equation (3)}$$

Thus, a plot of the dimer with respect to the total IL-37 concentration gives a typical binding isotherm (Fig. S1A). Additionally, the absolute concentration of the IL-37 monomer can also be calculated with increasing concentrations of IL-37 (Fig. S1B).

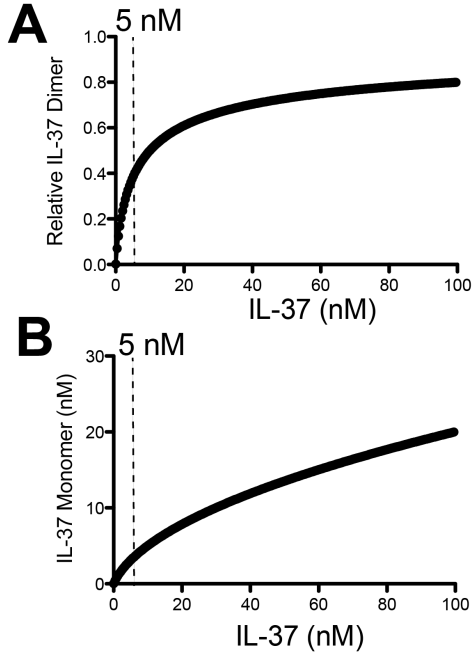

Figure S1. Theoretical determination of IL-37 dimer and monomer concentrations. A) The ratio of dimer to total IL-37 is shown as a function of IL-37 using a self-association constant (K_S) of 5 nM reported by Kumar et al. (11). B) The absolute concentration of IL-37 monomer expected to be present with increasing IL-37 concentrations.