Electronic Supplementary Information (ESI) for Soft Matter

Tunable immunonanoparticle binding to cancer cells: thermodynamic analysis of targeted drug delivery vehicles

Karyn Ho,[a,b] Yakov Lapitsky,[a] Meng Shi,[a,b] and Molly S. Shoichet[a-c]*
a. Department of Chemical Engineering & Applied Chemistry, University of Toronto
b. Institute of Biomaterials & Biomedical Engineering, University of Toronto
c. Department of Chemistry, University of Toronto

*Corresponding author
Molly S. Shoichet
University of Toronto
160 College Street, Room 514, Toronto, ON, Canada M5S 3E1
Tel: (416) 978-1460
Fax: (416) 978-4317
E-mail: molly.shoichet@utoronto.ca

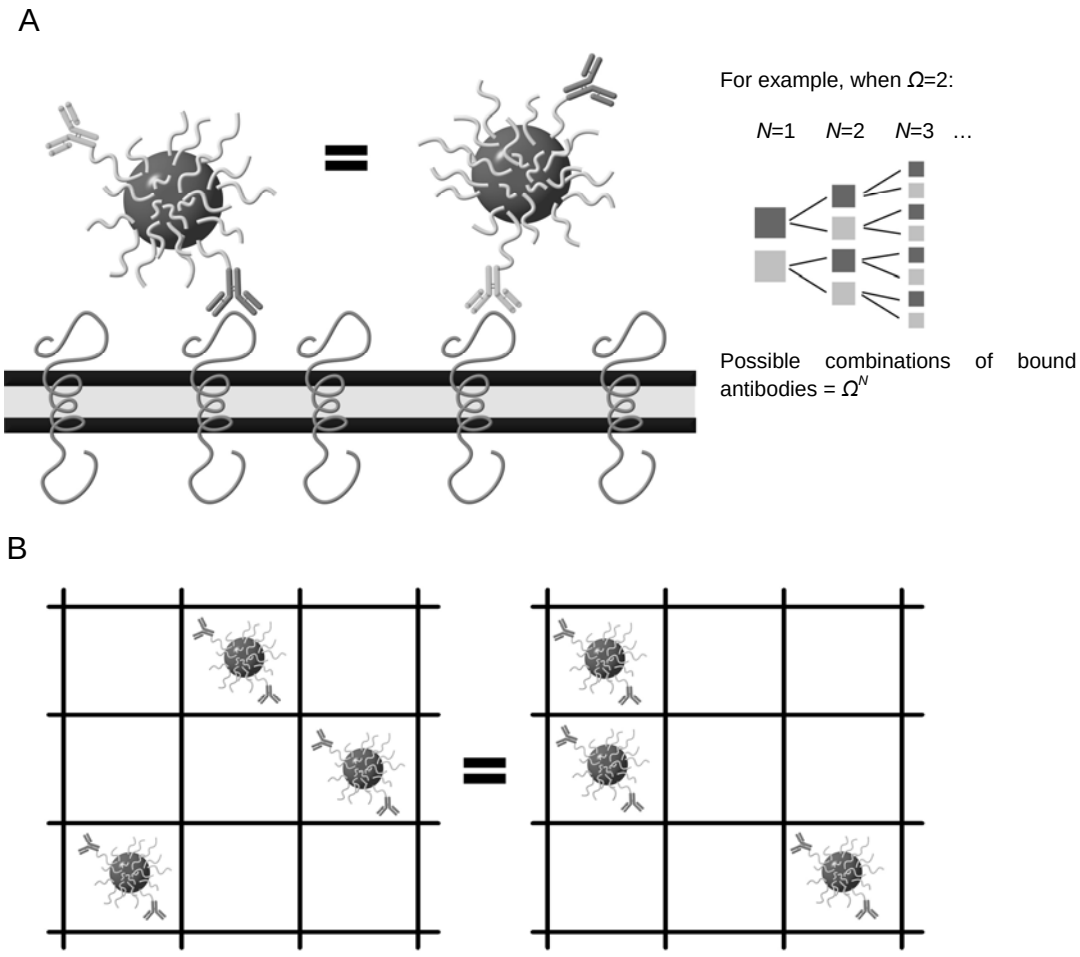

Figure S1. In the case of monovalent binding, increasing the number of antibodies per particle, Ω, results in an increase in the number of possible binding configurations where only one interaction occurs. **(A)** The number of possible combinations of monovalent binding events increases with the number of conjugated antibodies due to an amplified number of possible rotational binding orientations for N bound nanoparticles (first term of Equation 5). **(B)** Also, given a lattice of M potential binding sites, the number of distinct lattice configurations in which the particles can bind is given by a binomial coefficient (second term of Equation 5).