

Article 2: questions

Curk, T., Dobnikar, J., & Frenkel, D. (2017). Optimal multivalent targeting of membranes with many distinct receptors. *Proceedings of the National Academy of Sciences*.

Question 1:

What is the advantage of targeting cell surfaces based on their receptor profile, rather than on recognizing a single receptor?

Answer 1:

Single receptors are often common to many cell types. Therefore, targeting cell surfaces based on their receptor profile provides a much better selectivity.

Question 2:

Why is it incorrect to obtain the optimal ligand coating by maximizing the absolute curvature of the free energy?

Answer 2:

The absolute curvature of the free energy is maximized when the absolute value of the free energy is maximized. However, the free energy can be trivially controlled by changing the total number of ligands on the guest particle. Since selectivity must be maximized for a given value of the free energy, obtaining the optimal ligand coating by maximizing the absolute curvature of the free energy is incorrect.