Poster:
How molecular packets improve cell to cell communication

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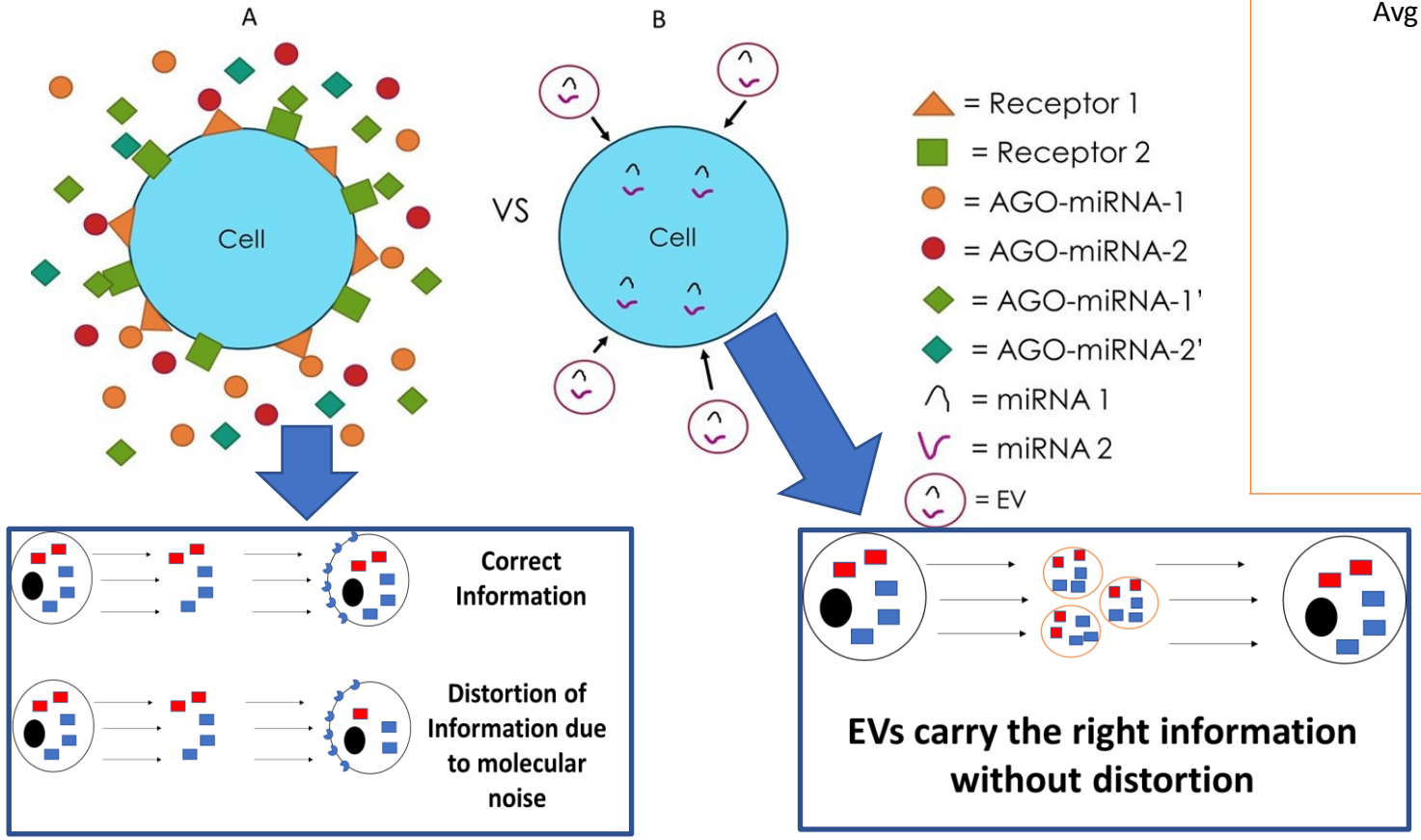
Objective

Highlight the advantages of Extracellular Vesicles (EVs) that merge with the cell membrane VS the release of single molecules in the extracellular environment perceived by receptors



Model

Probability that a receptor of type *k* is bound to the *correct* ligand:

$$P_k^{(L)} = \frac{c_k^{(L)}}{c_k^{(L)}+c_k^{(A-L)}} = \frac{1}{1+\alpha_k} \text{ where } \alpha_k = \frac{c_k^{(A-L)}}{c_k^{(L)}}$$

Avg and var of the # of receptors bound to correct ligands $\mu_k = \frac{N_k}{(1+\alpha_k)}$ $\sigma_k^2 = \frac{N_k \cdot \alpha_k}{(1+\alpha_k)^2}$

Resulting uncertainty: $H(X) = 2.0471 \cdot K + \frac{1}{2}\sum_{k=1}^{K} \log_2[\frac{N_k \cdot \alpha_k}{(1+\alpha_k)^2}]$