Synthetic Receptors for the Transmembrane Transport of Anions

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Transport of ions through lipid bilayers is very important for biological function. Absence or malfunction of membrane proteins forming anion channels is the cause of several diseases, of which cystic fibrosis is an example. Synthetic anion carriers have the potential to take over part of the function of these proteins. Such carriers extract the anion from the aqueous phase, move it across the apolar interior of the lipid bilayer while shielding its charge, to then release it on the other side of the membrane. Examples of ion carriers will be presented, along with the methodology to study their performance and proof of activity in cells.