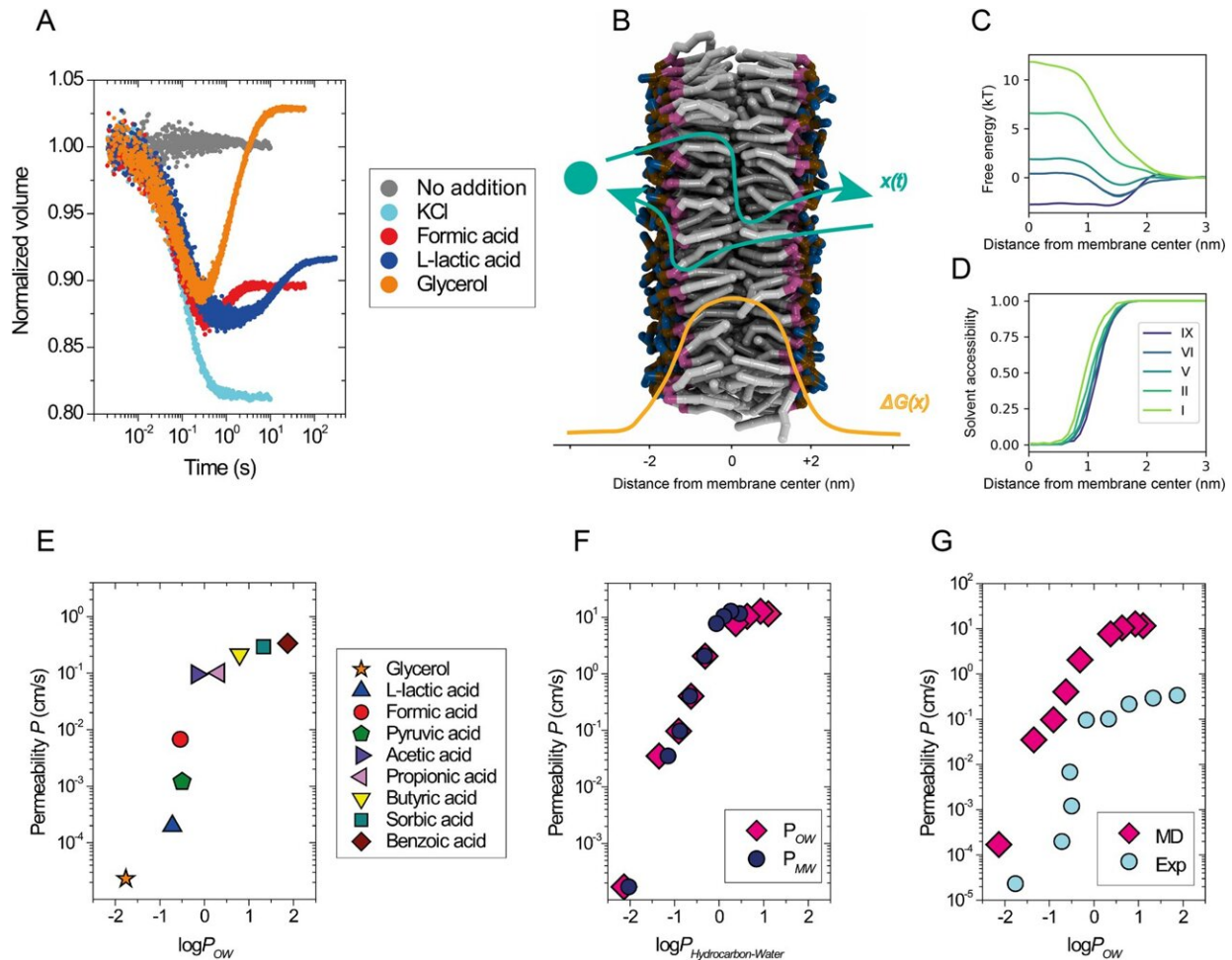


How cells control their borders

March 30 2022



Permeability of solutes as a function of their lipophilicity. A Overview of experimental assay. Kinetic data obtained with the calcein self-quenching assay using vesicles composed of DOPC mixed with buffer (gray) or osmotically shocked with 52.5 mM KCl (cyan), 50 mM sodium formate (red), 50 mM sodium L-lactate (blue) or 120 mM glycerol (orange) at 20 °C. B Schematic description of the permeation process, $x(t)$, through a lipid membrane with an example free energy profile, $\Delta G(x)$ (lipid tails, gray; glycerol moiety, purple;

phosphate moiety, ochre; and choline moiety, blue; water molecules are not shown). C Selected free energy profiles from simulations of solutes with varying hydrophobicity levels (I most hydrophilic, IX most hydrophobic) permeating through a DOPC lipid membrane as a function of the distance from the bilayer center along the membrane. Only one half of the whole symmetric permeation profile is shown. D Solvent accessibility profiles of the permeating solutes along the permeation pathway. Solute interact with solvent molecules even deep in the membrane tail region (x

Citation: How cells control their borders (2022, March 30) retrieved 21 June 2024 from <https://phys.org/news/2022-03-cells-borders.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.