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Interactions between cyclic cell penetrating peptides and lipid membranes KUN ZHAO, Bioengineering Department, University of California, Los Angeles, TAO LIU, Chemistry Department, the Ohio State University, MIKE CHOE, DANIEL KAMEI, Bioengineering Department, University of California, Los Angeles, DEHUA PEI, Chemistry Department, the Ohio State University, GERARD WONG, Bioengineering Department, University of California, Los Angeles —
Cyclic peptides exhibit strong enhancement in receptor-binding affinity, specificity, and stability relative to their linear counterparts, partially due to their reduced conformational freedom. In this work, we examine cyclic versions of cell penetrating peptides. Using small-angle x-ray scattering (SAXS) measurements, we show that cyclic polyarginine peptides generate saddle-splay curvature more efficiently than their linear counterparts, We show how this increase in induced saddle splay curvature impinges on the efficiency of cell penetration in a series of giant vesicle and intracellular trafficking experiments.

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