

DESIGN: SPHERES

R 

OSMOTIC PRESSURE
 $= P$

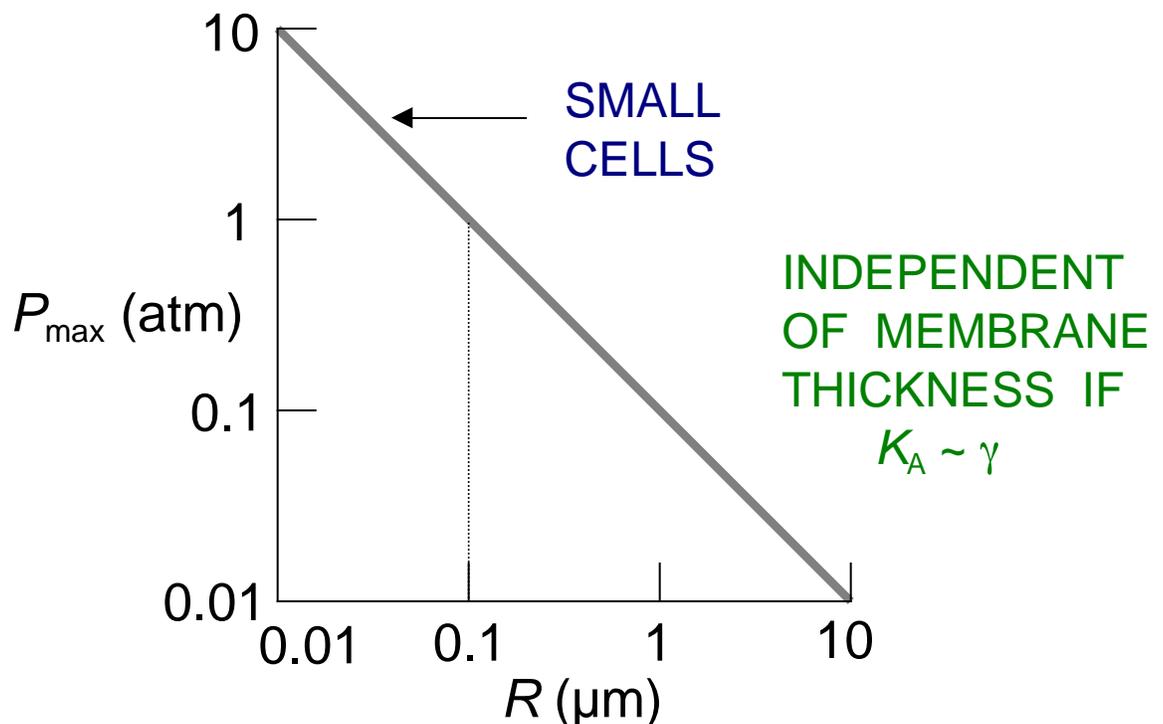
DESIGN: FLUID BAG WITH OSMOTIC PRESSURE
SIZE LIMIT IS IMPOSED BY SURFACE STRESS

$$\tau = PR / 2$$

BILAYERS RUPTURE AT 2-5% STRAIN, OR

$$\tau_{\text{RUPT}} = (2-5) \times 10^{-2} K_A$$

FROM $\tau_{\text{RUPT}} \sim RP$, THE MAXIMUM PRESSURE
SUSTAINABLE BY A CELL WITHOUT A WALL IS



HIGH OSMOTIC PRESSURE GOOD FOR REACTION
RATES