

Hydrophobicity

- 1) Why is the hydrophobic effect badly named?
- 2) Looking at Radzicka and Wolfenden (Biochem 1988 27 1664-1670)
 - 2a) Compare the free energy of transfer from cyclohexane (chx) to water and vapor to water (table II & Fig 6). Which is more favorable; by how about how many kcal (give me a range of differences or an approximate average difference for the different sidechains). Why is there this difference in transfer energy (what interactions contribute)?
 - 2b) What's the free energy of transfer of Asp and of Leu from chx to water? What would be the equilibrium constant for transfer for these 2 amino acids? (Tell me which table you get the numbers from)
- 3) Give an explanation for there being no lose in enthalpy but very unfavorable entropy when a hydrocarbon is transfer to water at 20 C.
- 4) Write a description of how the x (buried > accessible, kcal) and y (cyclohexan > water, kcal) axis information would be obtained to generate figure 4 in Radzicka and Wolfenden (Biochem 1988 27 1664-1670). What is the conclusion of the figure?