From Lab Bench to Your Medicine Cabinet

**Week 10-Liposomal Delivery**
Novel peptide ligand directs liposomes toward EGF-R high-expressing cancer cells in vitro and in vivo  
Shuxian Song, Dan Liu, Jinliang Peng, Hongwei Deng, Yan Guo, Lisa X. Xu, Andrew D. Miller, and Yuhong Xu  
The FASEB journal 5:1396-1404 (2009).

**Helpful Review**
Liposomes and nanoparticles: nanosized vehicles for drug delivery in cancer  
Yogeshkumar Malam, Marilena Loizidou and Alexander M. Seifalian  

**In-class Discussion Questions**

1. List four reasons a delivery system may be needed in therapeutics.
2. List a few liposome delivery therapeutics that are commercially available.
3. What is PEG? and what purpose does it serve on liposome delivery systems?
4. What is the target of the liposome designed by the authors? What features are they incorporating into the liposome and why?
5. How was the targeting peptide selected?
6. How was the target peptide and control conjugated to PEG lipid?
7. Is the data in Figure 3 convincing of specific binding? And, in Figure 4 for internalization?
8. Outline the strengths and weakness of the experimental approach.
9. Propose an additional set of experiments that would extend or improve the investigation.