Lecture 4: Cell Targeting and its Evaluation

4.1 Overview: targeting nanosystems to cells
   4.1.1 antibody targeting
   4.1.2 peptide targeting
   4.1.3 aptamer targeting
   4.1.4 ligand-receptor targeting

4.2 Antibodies – polyclonal and monoclonal
   4.2.1 Where do antibodies come from – in nature?
   4.2.2 How do we make them in the laboratory?
   4.2.3 Monoclonal antibodies – some details you need to know!
   4.2.4 Labeling strategies
   4.2.5 Therapy problems with mouse monoclonal antibodies
   4.2.6 “Humanizing” monoclonal antibodies to reduce adverse host immune reactions
   4.2.7 Why antibodies may not be a good overall choices for targeting nanosystems to cells

4.3 Peptide targeting
   4.3.1 How does a peptide target?
   4.3.2 Examples of peptide targeting
   4.3.3 Creating new peptides by random peptide phage display libraries
   4.3.4 High-throughput screening of those peptide libraries
   4.3.5 Advantages and disadvantages of peptide targeting

4.4 Aptamer targeting
   4.4.1 What are aptamers and how do they target?
   4.4.2 Some different types of aptamers
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   4.4.4 How do you screen for useful aptamers?

4.5 Ligand-receptor targeting
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   4.5.2 What are their advantages/disadvantages?
   4.5.3 Example – folate receptors

4.6 How do we quantitatively evaluate targeting?
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Lecture 4 References


