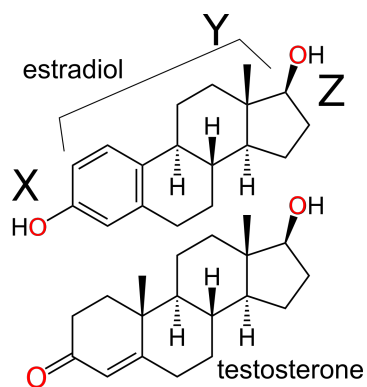Estrogen and testosterone are recognized by different proteins: the "estrogen receptor" (ER) and "androgen receptor" (AR).

1. Based on the structure of these steroids, what sorts of amino acids should be present in a pocket that binds these steroids? (You can break up predictions by regions "X", "Y", and "Z".

2. Schematic versions of the ER and AR binding pockets are drawn below. Sketch how you think the steroids might dock into these pockets. (In your sketch, you do not have to draw details on the steroids that you think don't matter.) Predict which pocket is the AR (binds to testosterone) versus the ER (binds to estrogen).
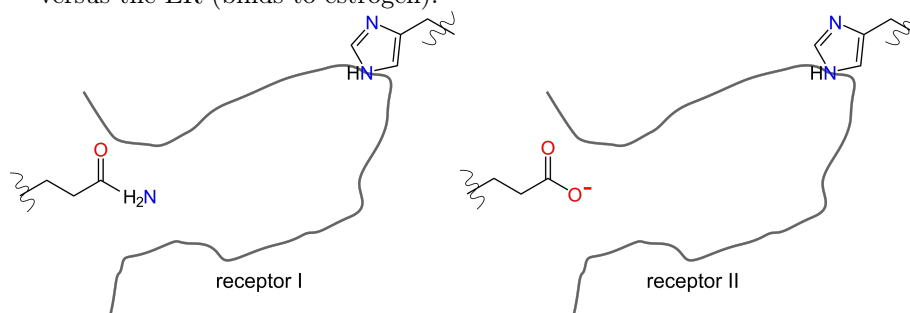
3. What molecular interactions are important for *affinity*? What molecular interactions are most important for *specificity*?

4. How might you test these predictions?

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