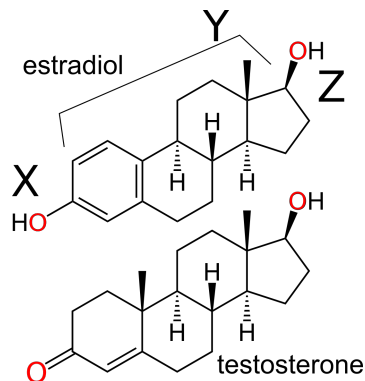
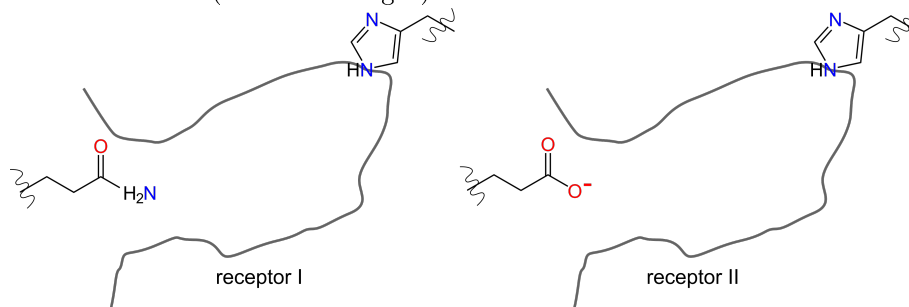


Estrogen and testosterone are recognized by different proteins: the “estrogen receptor” (ER) and “androgen receptor” (AR).

1. What sorts of amino acids might interact with the the regions labeled *X*, *Y*, and *Z* on the steroid below?



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 can exclude any details on the steroids that you think don't matter.) Can you guess which pocket is the AR (binds to testosterone) versus the ER (binds to estrogen)?



3. What molecular interactions are important for binding? What molecular interactions are most important for *specificity*?

4. How might you test these predictions?