

Amino acid pK values: Some food for thought

(Try out by October 12)

1. Explain in terms of structures why pK_1 of D < pK_1 of E; but pK_2 of D > pK_2 of E.
2. Explain in terms of pK_1 , pK_2 and pK_R values, why histidine side chain can accept as well as donate protons under physiological conditions, and hence histidine is commonly found in the active sites of enzymes.
3. The amino acids Y and K have very similar pK_1 , pK_2 and pK_R values. However their pK_I values are very different. Explain!