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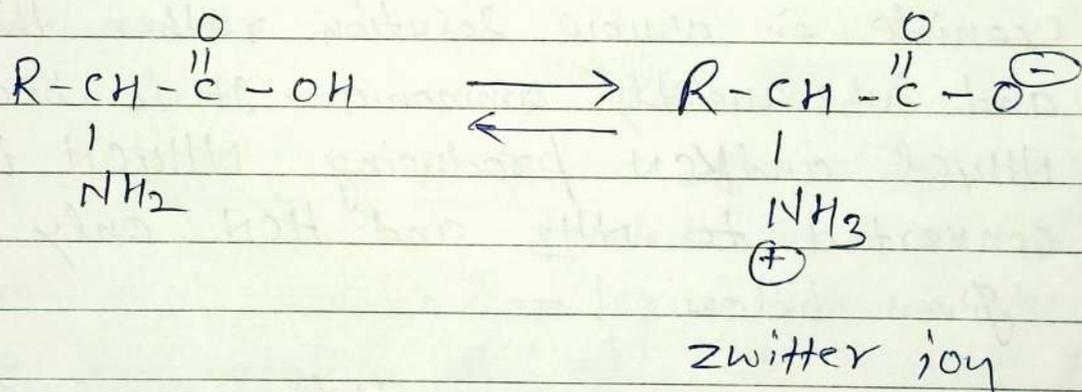
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Ionic Properties of amino acids! -

Amino acids contain both acidic ($-COOH$) and basic ($-NH_2$) functional groups.

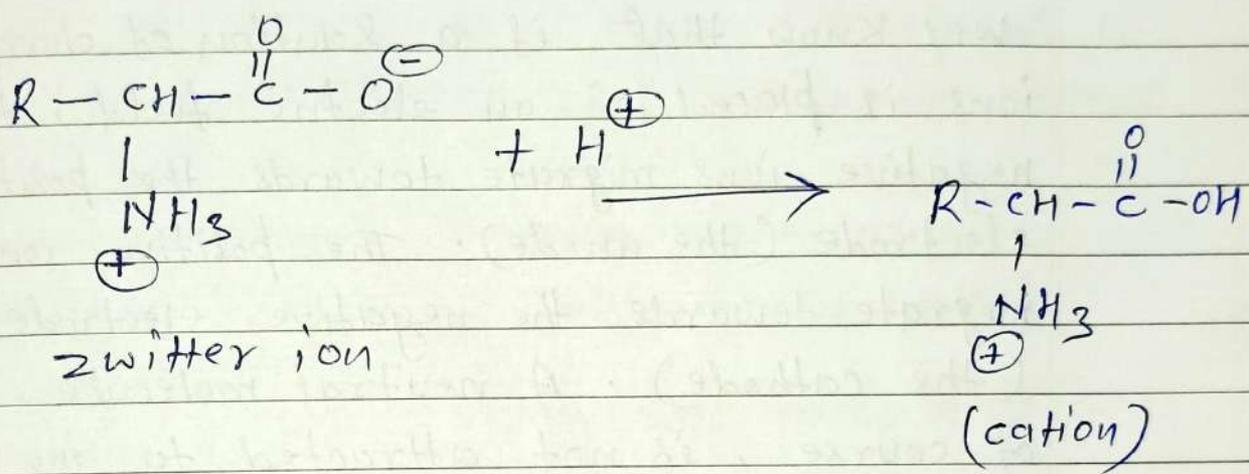
Because of this, they show ionic properties in aqueous solution. In aqueous solution, the acidic ($-COOH$) gr. can lose a proton and the basic ($-NH_2$) gr. can gain a proton in a kind of internal acid-base reaction. This exchange of hydrogen as proton is an ~~it~~ intermolecular proton exchange reaction and the product of this internal reaction is called a dipolar ion or zwitter ion, which contains both +ve and -ve charge and therefore it is a neutral species.



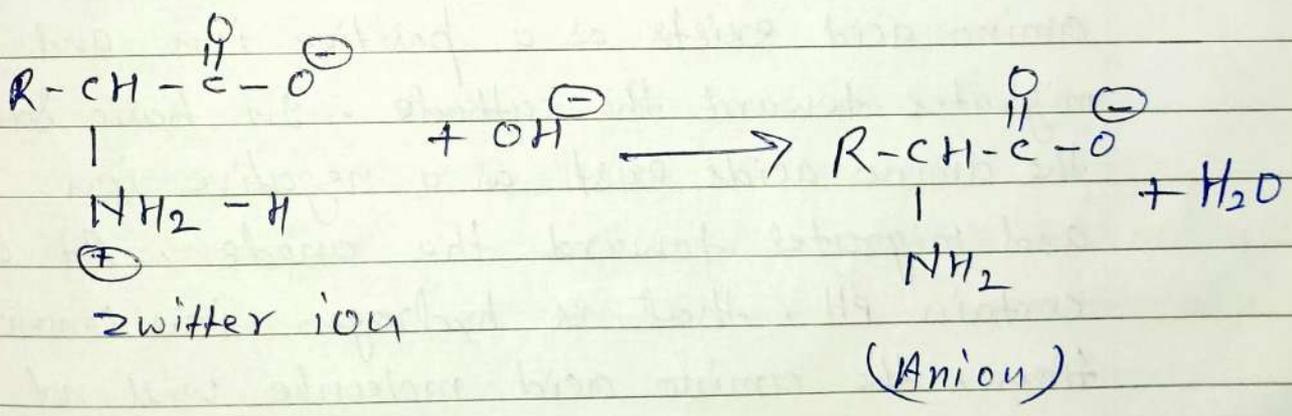
As amino acids are amphoteric, they react with both acids and bases. The reaction with a base converts the ammonium -

substituent ($-NH_3^+$) to an amino gr. ($-NH_2$) because the base abstracts H^+ . The reaction with an acid converts the carboxylate substituent ($-COO^-$) to a carboxyl substituent ($-COOH$).

An amino acid in acidic solution



An amino acid in basic solution!-



Thus in acidic solution amino acids exist as positive ion (cations) while in basic solution

they exist as negative ions (anions)