Date: 16.7-20.

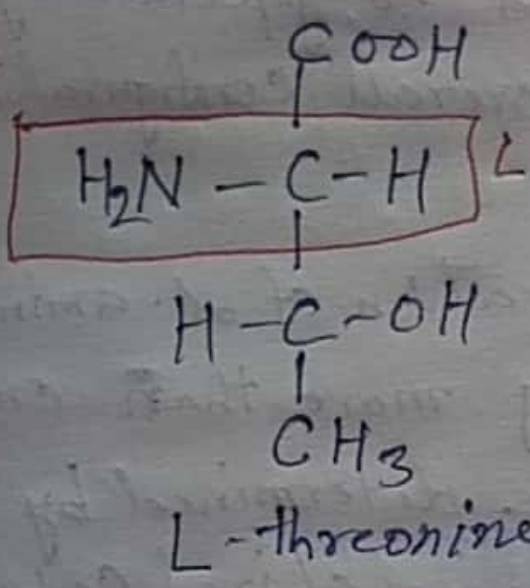
Continued..... 6.

(Determination):

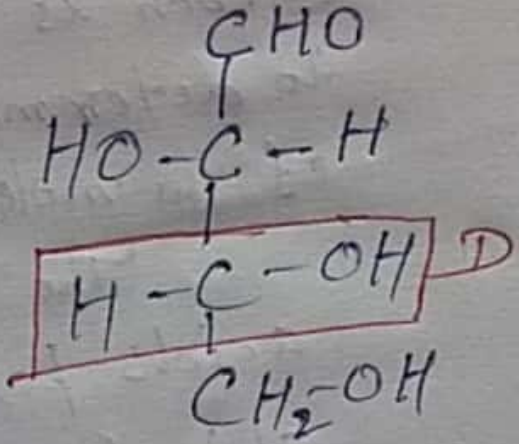
When there are several chiral carbons in a molecule, the configuration at one center usually is related directly or indirectly to glyceraldehyde and the configurations at the other centers are determined relative to the first. Thus in the aldehyde form of the important sugar, (+) glucose, there are four chiral centers, and so there are $2^4 = 16$ possible stereoisomers. The projection formula of the isomer that corresponds to the aldehyde form of natural glucose is 4.

By convention for sugars, the configuration of the highest-numbered chiral carbon is referred to glyceraldehyde to determine the overall configuration of the molecule.

The configuration of L-amino acids possessing more than one chiral carbon are determined by the lowest-numbered chiral carbon, which is the carbon alpha to the carboxyl group. Thus, even though the natural L-amino acid, threonine, has exactly the same kind of arrangement o substituents as the natural suga threose, threonine by the amino-acid convention belongs the L-series, whereas threos by the sugar convention belongs the D-series;



L-threonine



D (–) threose.

A serious ambiguity arises for compounds such as the active tartaric acids. If the amino-acid convention is used, (+)-tartaric acid falls in the D series, by the sugar convention, it has the L-configuration. One way out of this dilemma is to use the subscripts s and g to denote the amino acid or carbohydrate conventions, respectively. Then the absolute configuration of (+) tartaric acid can be denoted as either D_s (+) tartaric acid of L_g (+) tartaric acid.

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