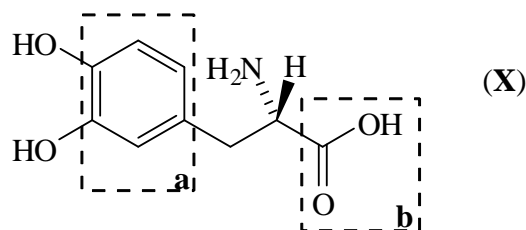


- Dopa is a non-proteinogenic amino acid used to treat Parkinson's disease. Only the enantiomer (**X**) is effective in restoring nerve function. The other enantiomer is highly toxic.



What is the molecular formula of (**X**)?

List the substituents attached to the stereogenic centre in descending order of priority according to the sequence rules.

highest priority

lowest priority

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What is the absolute stereochemistry of (**X**)? Write (*R*) or (*S*).

Name the functional groups, highlighted by the boxes **a** and **b**, present in (**X**).

<b>a</b> =	<b>b</b> =
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Give the constitutional formula of the product obtained when (**X**) is treated with  $\text{NaHCO}_3$ .