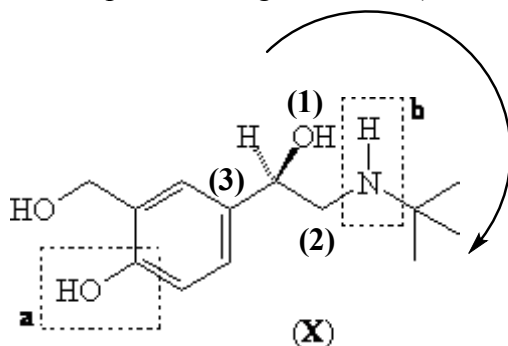
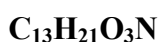


Marks
6

- Salbutamol (**X**) is the active ingredient in the asthma treatment Ventolin™. Although the drug is marketed as a racemic mixture, the enantiomer of (**X**) shown is solely responsible for the beneficial pharmacological action (smooth muscle relaxation).



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
—OH	$\text{—CH}_2\text{—N(CH}_3)_2$	$\text{—CH}_2\text{—C}_6\text{H}_4\text{—OH}$	—H

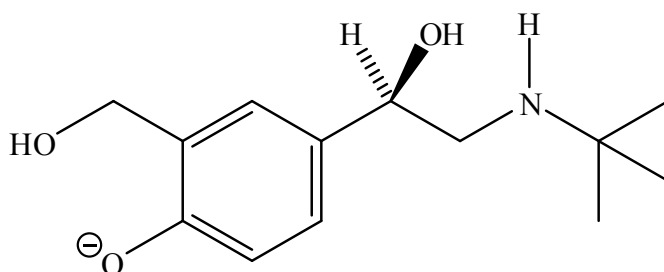
What is the absolute stereochemistry of (**X**)? Write (*R*) or (*S*).

(*R*)

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

a = phenol	b = secondary amine
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Give the constitutional formula of the product formed when (**X**) is treated with cold dilute sodium hydroxide solution.



The H^+ is removed from the phenol OH group as the negative charge is stabilized by delocalization onto the aromatic ring.