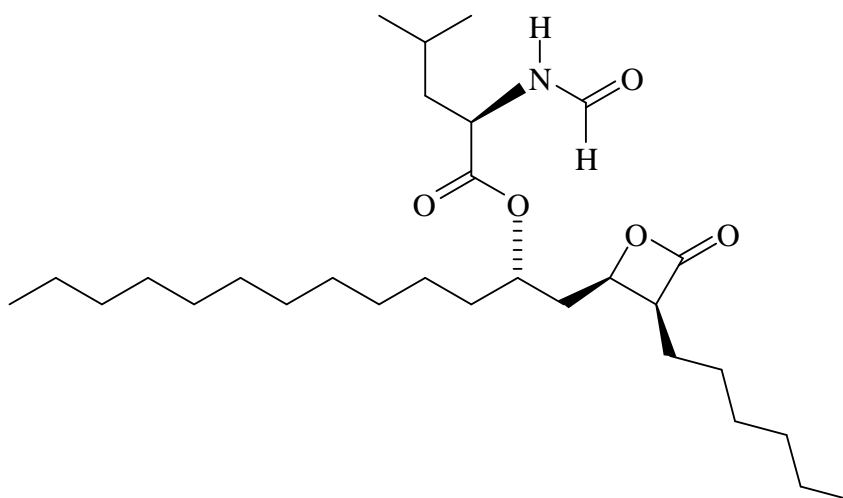


Marks
6

- Orlistat (shown below) is a drug for obesity management which acts by inhibiting the absorption of dietary fats.



Is it likely to be soluble in water? Why?

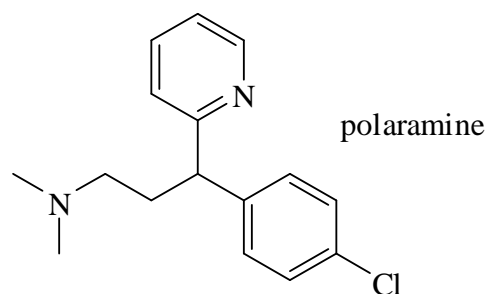
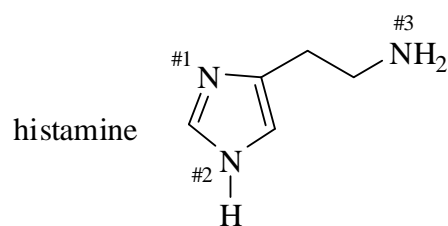
Indicate on the above structure all stereogenic centres. Select one of these centres and clearly assign its stereochemical configuration.

Name the functional groups present in orlistat.

THE REMAINDER OF THIS PAGE IS FOR ROUGH WORKING ONLY

- The structures of histamine and polaramine are shown below.

Marks
6



Indicate the hybridisation and geometry of bonds around each of the nitrogen atoms in histamine.

	Hybridisation	Geometry of bonds
N #1:		
N #2:		
N #3:		

Draw a tautomer of histamine.

In histamine, only one of the nitrogen atoms in the ring is easily protonated (basic). Indicate which it is and explain why.

THIS QUESTION CONTINUES ON THE NEXT PAGE.

The release of histamine in the body triggers nasal secretions and constriction of airways. Polaramine is one of many anti-histamine compounds used to treat allergies. Explain what structural features of polaramine might make it a suitable anti-histamine agent.

Marks
3

(+)-2-[*p*-Chloro- α -[2-(dimethylamino)ethyl]benzyl]pyridine is another name for polaramine. What does the (+) in this name mean?