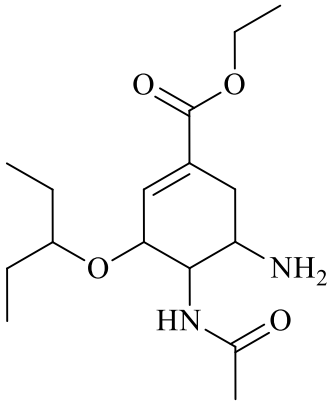
Marks
2

- Oseltamivir, marketed under the trade name Tamiflu, is an antiviral drug, which may slow the spread of influenza (flu) virus between cells in the body by stopping the virus from chemically cutting ties with its host cell.

Tamiflu



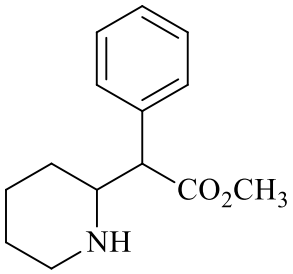
Give the molecular formula of Tamiflu.

List the functional groups present in Tamiflu.

Marks 7

- Methylphenidate, also known as Ritalin, is a psychostimulant drug approved for treatment of attention-deficit disorder. It belongs to the piperidine class of compounds and increases the levels of dopamine and norepinephrine in the brain through reuptake inhibition of the monoamine transporter.

methylphenidate

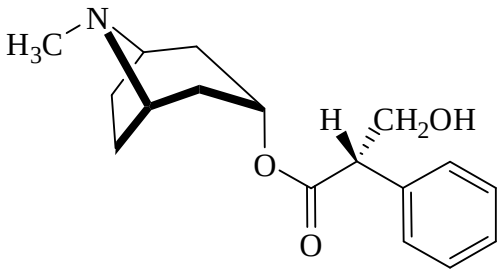


Give the molecular formula of methylphenidate.

List the functional groups present in methylphenidate.

Marks 7

- The tropane alkaloid (-)-hyoscyamine is found in certain plants of the *Solanaceae* family. It is an anticholinergic agent that works by blocking the action of acetylcholine at parasympathetic sites in smooth muscle, secretory glands and the central nervous system.

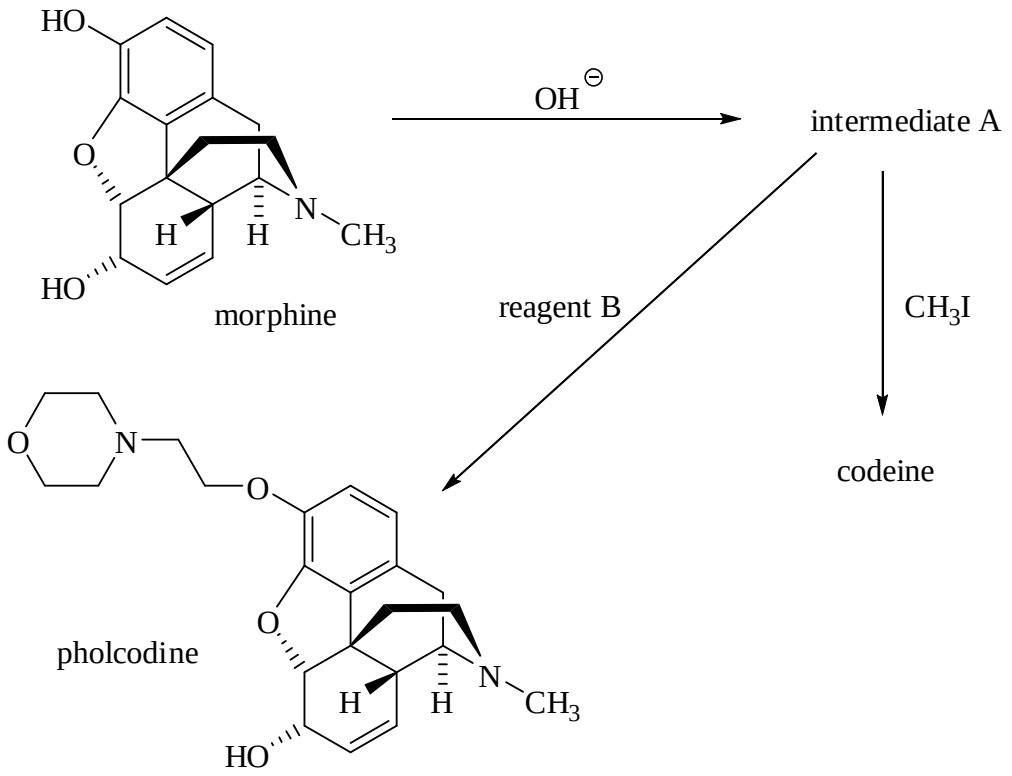


Give the molecular formula of (-)-hyoscyamine.

List the functional groups present in (-)-hyoscyamine.

Marks 2

- Morphine is the principal active agent in opium and is a highly potent analgesic drug. Its structure and conversion into codeine (a moderate analgesic) and pholcodine (a cough suppressant) are shown below.

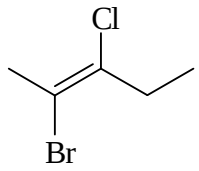
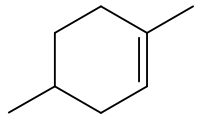
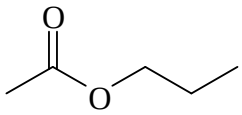
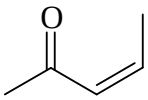
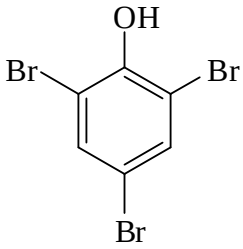


Give the molecular formula of morphine.

Identify the functional groups present in morphine.

- Name the following compounds. Make sure you include stereochemical descriptors where appropriate.

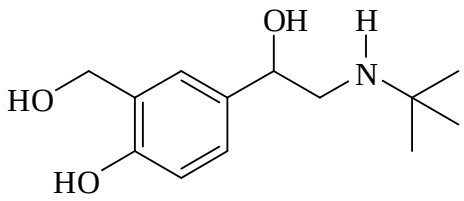
Marks 5

THE REMAINDER OF THIS PAGE IS FOR ROUGH WORKING ONLY.

Marks 2

- Salbutamol is available under the trade name Ventolin® as a racemic mixture of compounds. A stick representation of the compound is shown below.



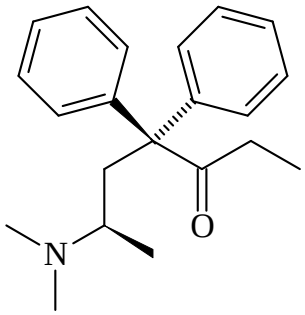
salbutamol

Give the molecular formula of salbutamol.

List the functional groups present in salbutamol.

Marks
2

- A stick representation for the active enantiomer of methadone, an analgesic used as a maintenance drug in the treatment of heroin addiction, is shown below.



Give the molecular formula of methadone.

List the functional groups present in methadone.

- Name the following compounds.

Marks 2