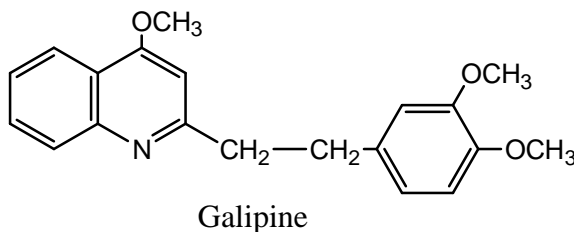
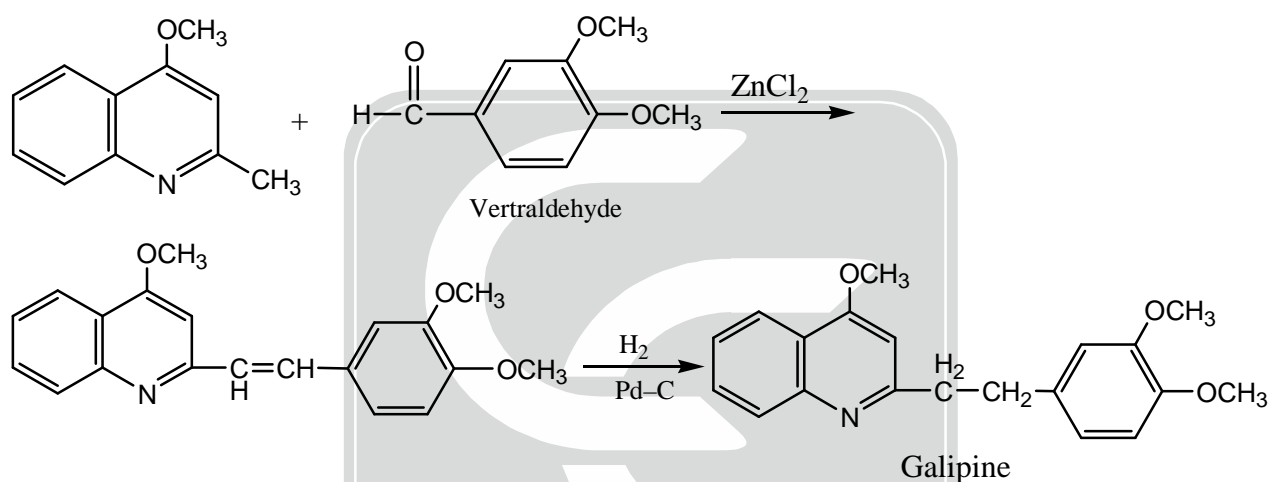


Guinoline Group :

Galipine: Molecular formula $C_{20}H_{21}NO_3$, M.P. 113°C .



Synthesis:



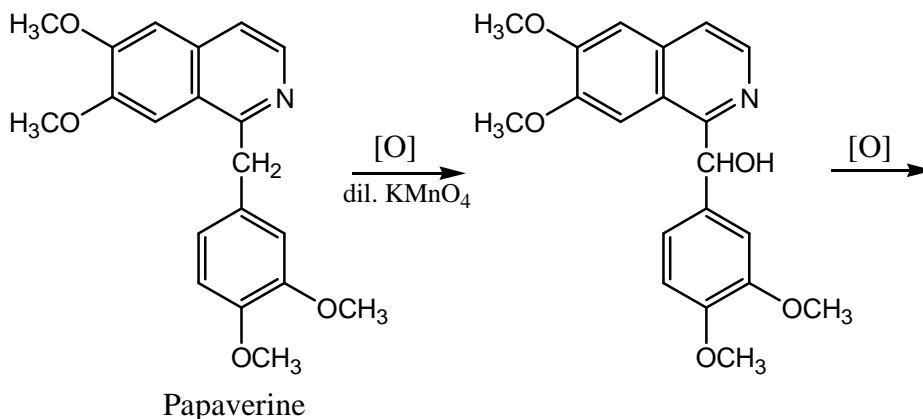
Isoquinoline Group :

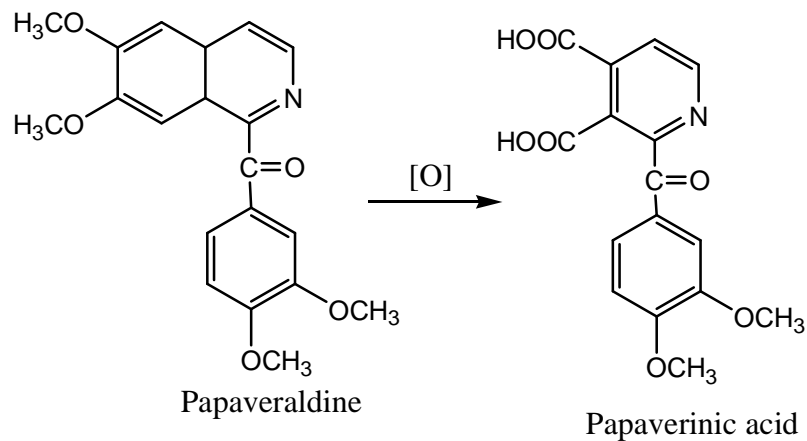
Opium Alkaloids: Many alkaloids have been isolated from opium, and they are divided into two groups according to the nature of their structure.

- (i) Isoquinoline group, for example Papaverine, Laudanosine etc.
- (ii) Phenanthrene group, for example morphine.

Papaverine: Molecular formula $C_{20}H_{21}NO_4$, M.P. 147°C .

Optically inactive alkaloids, does not contain any chiral centre.



**Synthesis:**