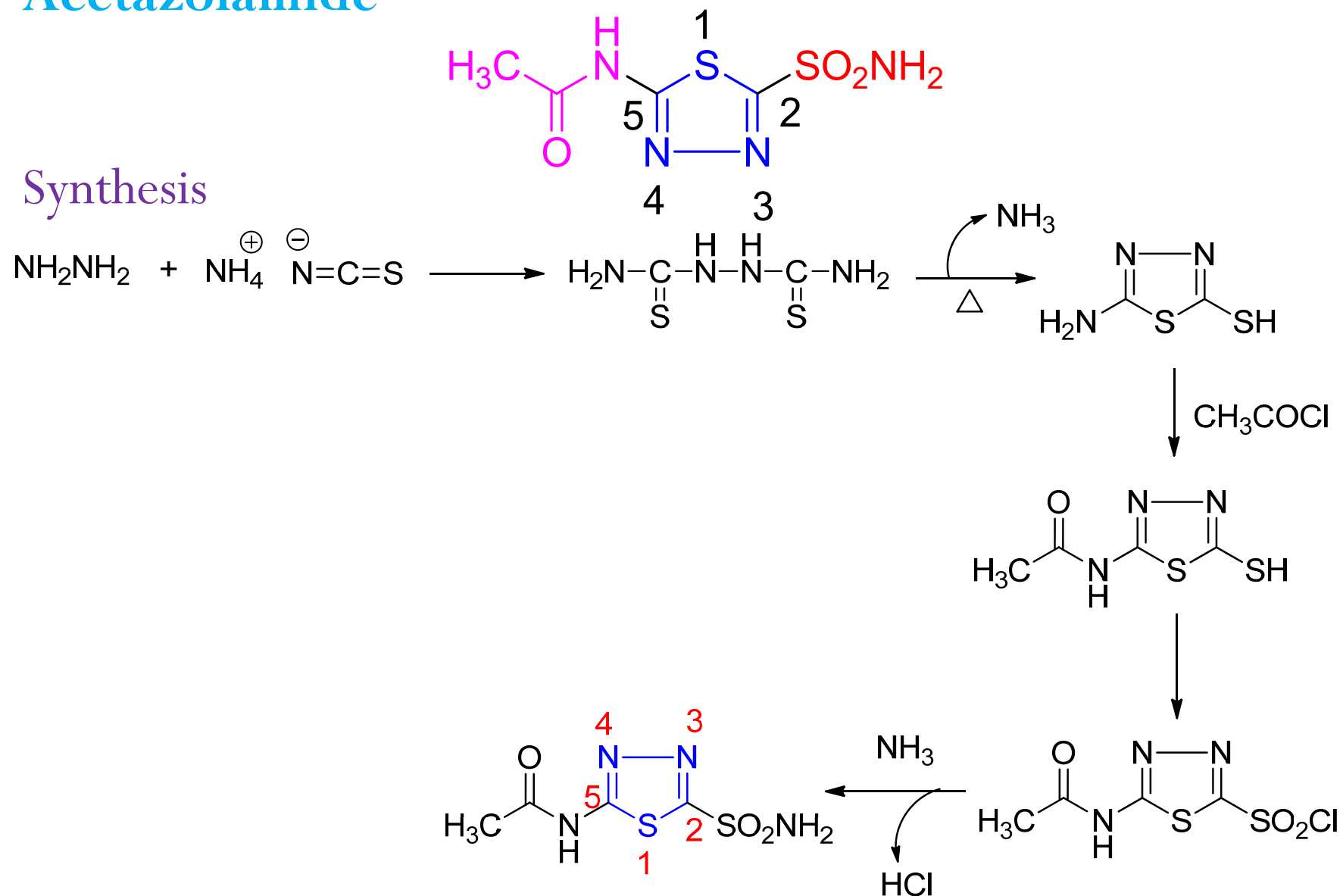


Carbonic anhydrase inhibitors

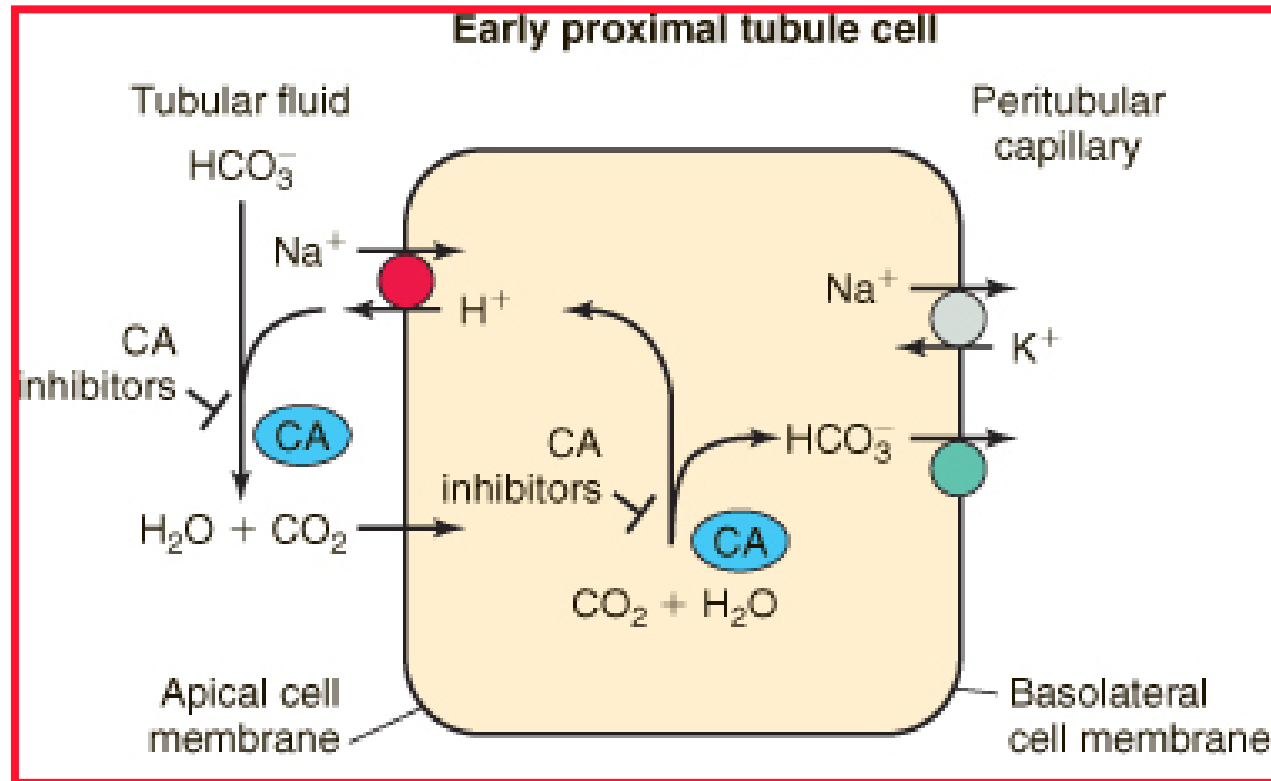
Acetazolamide

Synthesis



MOA

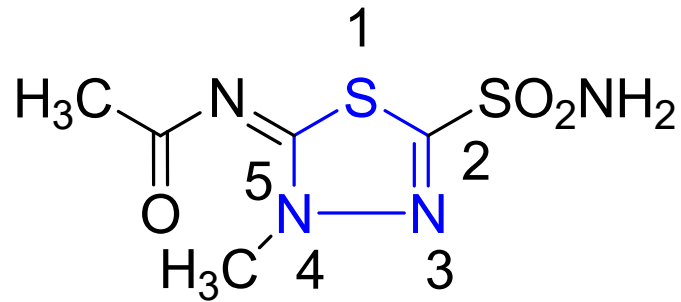
- Inhibits carbonic anhydrase in renal proximal tubule cells
carbonic anhydrase catalyzes formation of HCO_3^- and H^+ from H_2O and CO_2
- Inhibition of carbonic anhydrase decreases $[\text{H}^+]$ in tubule lumen and decreases the availability of H^+ for Na^+/H^+ exchange
- Increases Na^+ and H_2O retention in lumen. This leads to alkaline urine and an increase in the excretion of bicarbonate, sodium, potassium, and water.



Uses

For adjunctive treatment of: edema due to congestive heart failure; drug-induced edema; chronic simple (open-angle) glaucoma.

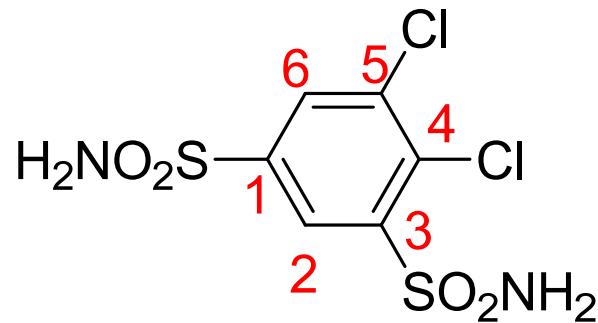
Methazolamide



MOA: Similar to acetazolamide

Uses: For treatment of chronic open-angle glaucoma and acute angle-closure glaucoma

Dichlorophenamide



MOA: Similar to acetazolamide

Uses: For adjunctive treatment of chronic simple (open-angle) glaucoma, secondary glaucoma, and preoperatively in acute angle-closure glaucoma where delay of surgery is desired in order to lower intraocular pressure