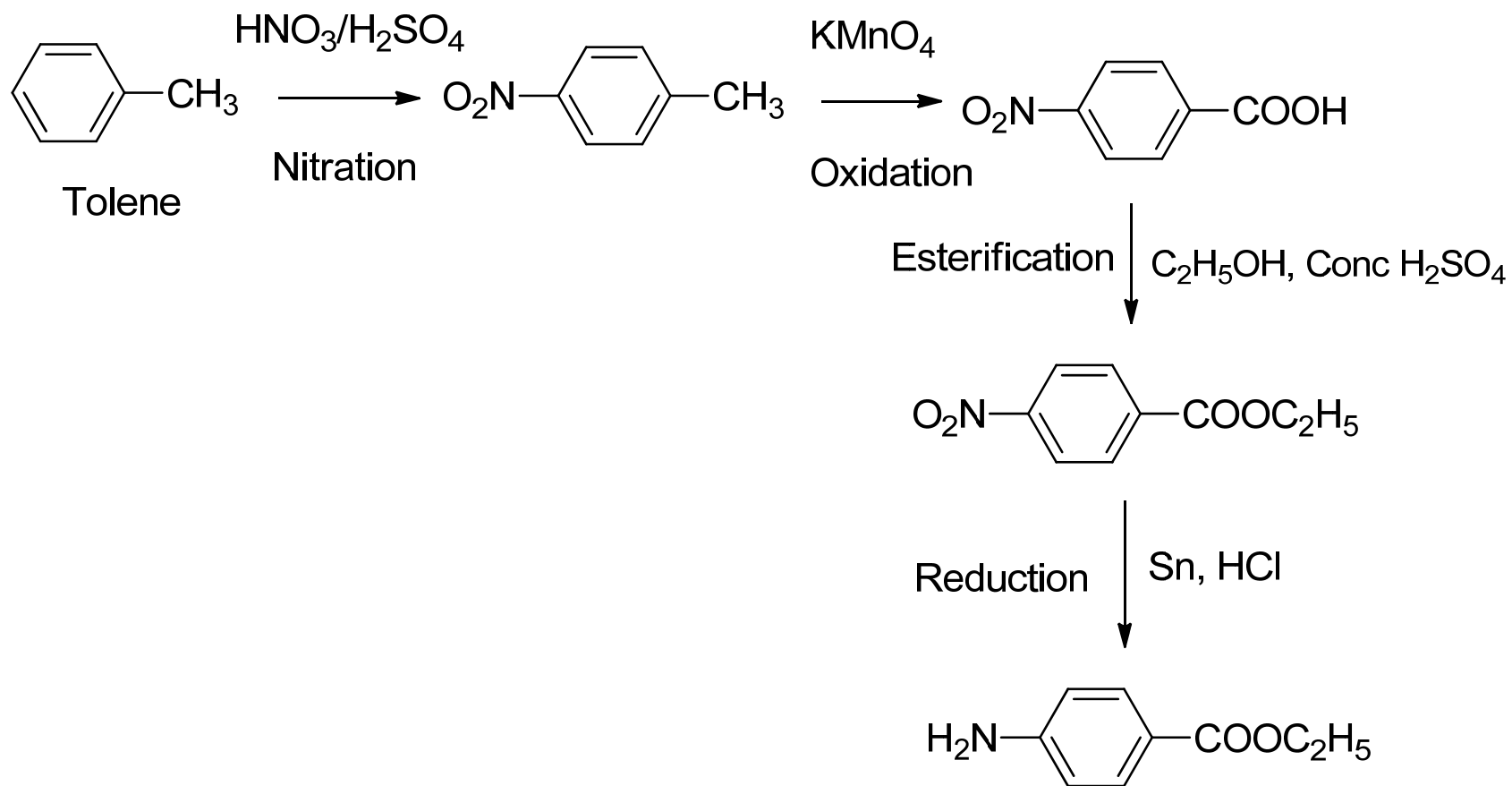


## P-aminobenzoic acid derivatives

### Benzocaine



## Mechanism of action

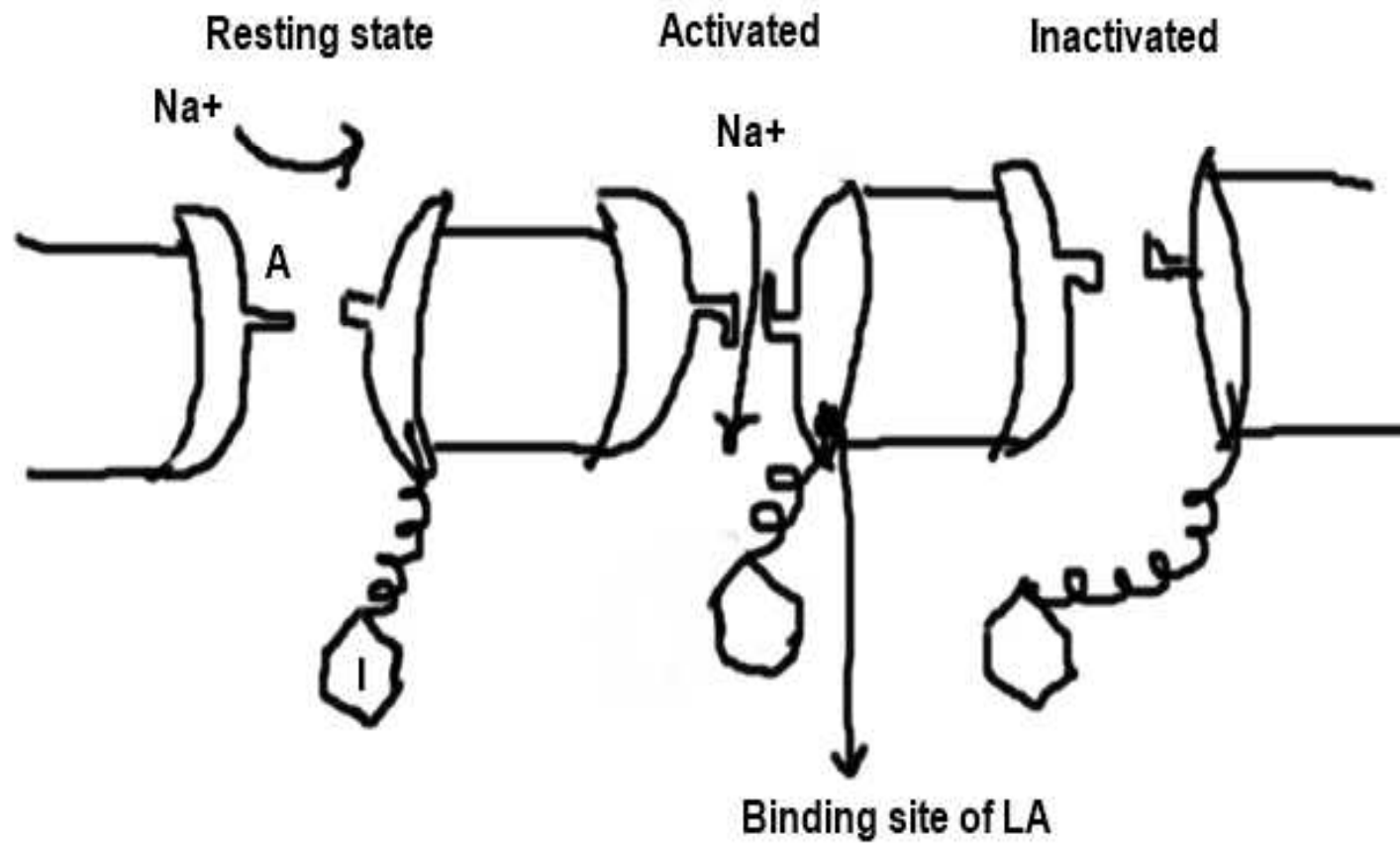
○ The local anaesthetics decrease the excitability of nerve cells by decreasing the entry of  $\text{Na}^+$  ions during upstroke of action potential.

○ The local anaesthetics interact with a receptor situated within the voltage sensitive  $\text{Na}^+$  channel and raise the threshold of channel opening.

○ Local anaesthetic blocks  $\text{Na}^+$  conductance by two possible modes of action, the tonic and the phasic inhibition.

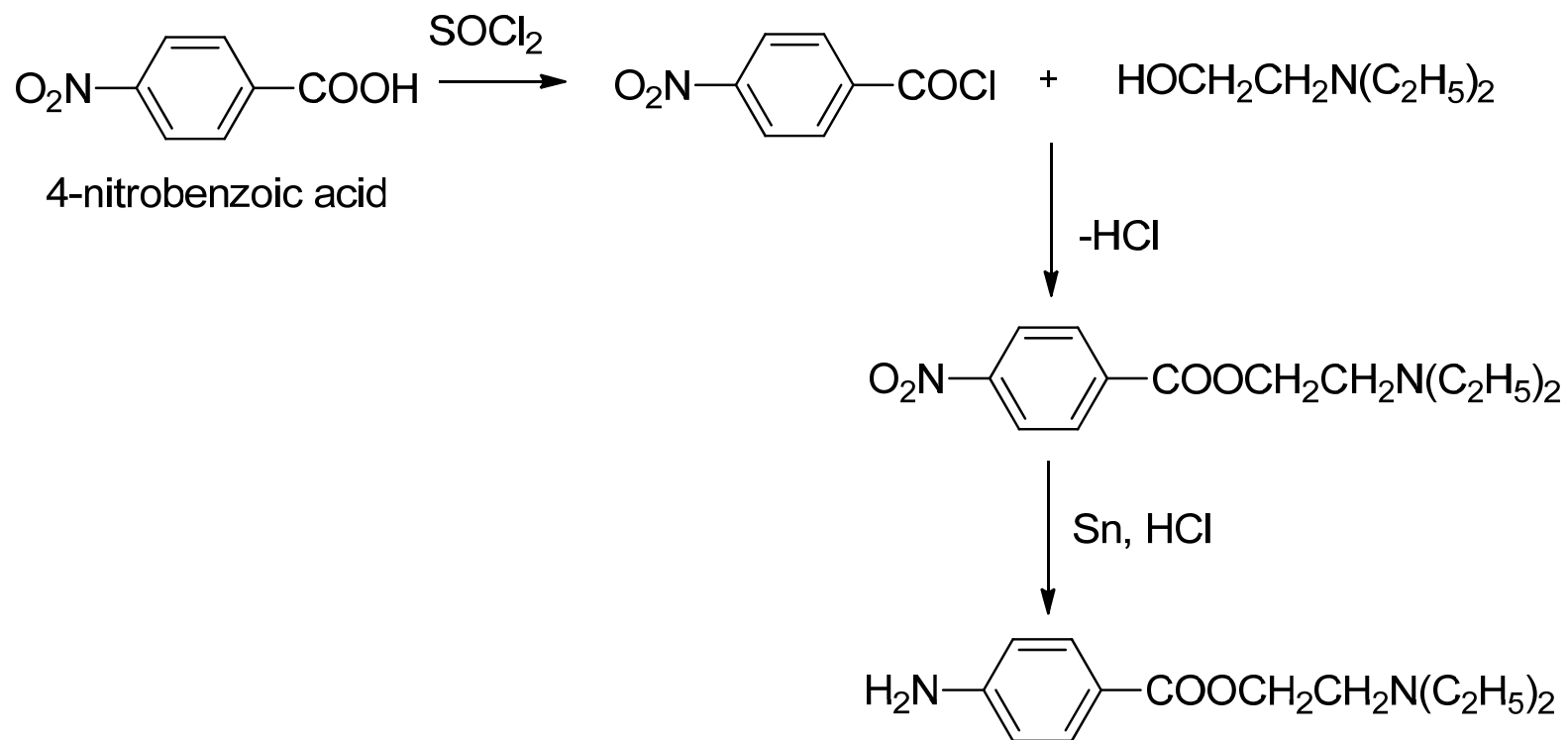
○ Tonic inhibition results from the binding of LA to nonactivated closed channel while phasic inhibition results from the binding of LA to open state or inactivate state of channels.

**Uses:** For general use as a lubricant and topical anesthetic on esophagus, larynx, mouth, nasal cavity, rectum, respiratory tract or trachea and urinary tract.



Voltage sensitive Na<sup>+</sup> Channel

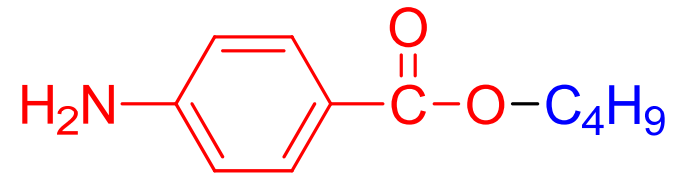
## Procaine



MOA: Similar to benzocaine

Uses: For general use as a lubricant and topical anesthetic on esophagus, larynx, mouth, nasal cavity, rectum, respiratory tract or trachea and urinary tract.

## Butamben

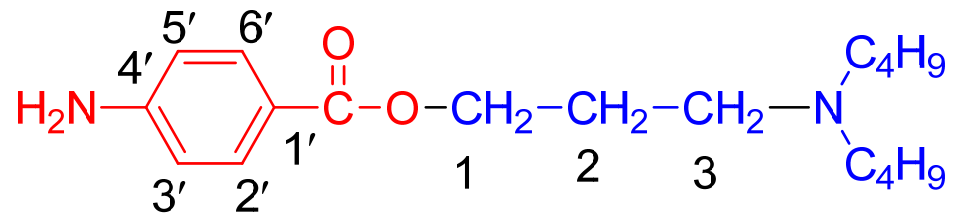


IUPAC: Butyl 4-aminobenzoate

MOA: Similar to benzocaine

Uses: For general use as a lubricant and topical anesthetic on esophagus, larynx, mouth, nasal cavity, rectum, respiratory tract or trachea and urinary tract.

## Butacaine

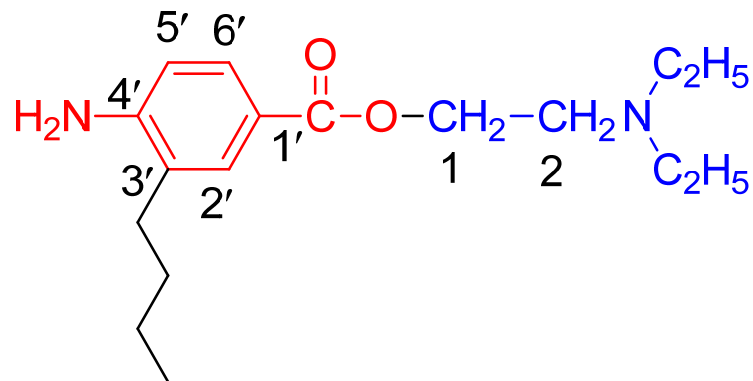


IUPAC: 3-(dibutylamino)propyl 4'-aminobenzoate

MOA: Similar to benzocaine

Uses: For general use as a lubricant and topical anesthetic on esophagus, larynx, mouth, nasal cavity, rectum, respiratory tract or trachea and urinary tract.

## Benoxinate

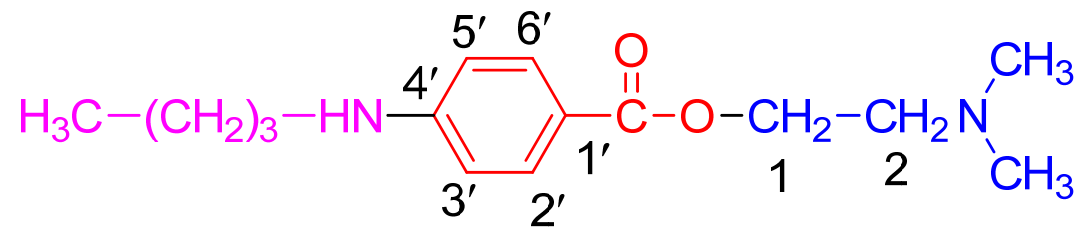


IUPAC: 2-(diethylamino)ethyl 4'-amino-3'-butoxybenzoate

MOA: Similar to benzocaine

Uses: For general use as a lubricant and topical anesthetic on esophagus, larynx, mouth, nasal cavity, rectum, respiratory tract or trachea and urinary tract.

## Tetracaine



IUPAC: 2-(dimethylamino)ethyl 4'-(butylamino)benzoate

MOA: Similar to benzocaine

Uses: For general use as a lubricant and topical anesthetic on esophagus, larynx, mouth, nasal cavity, rectum, respiratory tract or trachea and urinary tract.