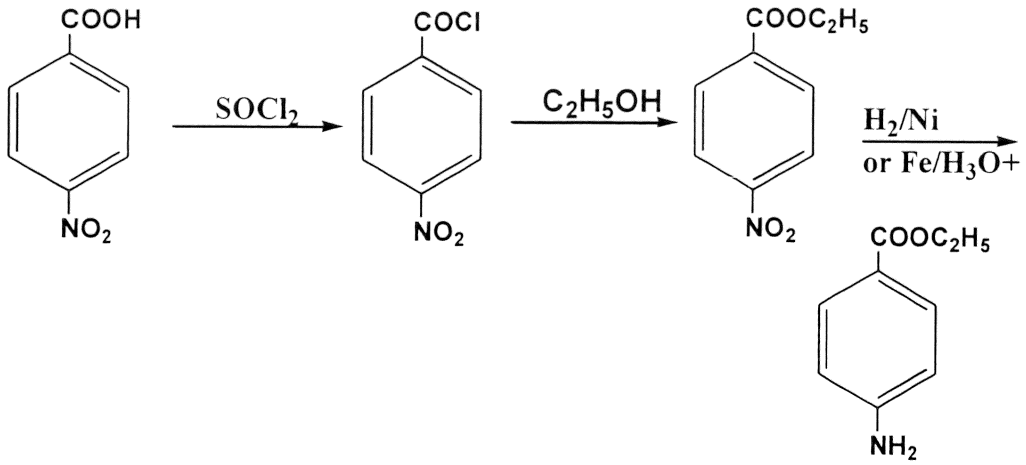
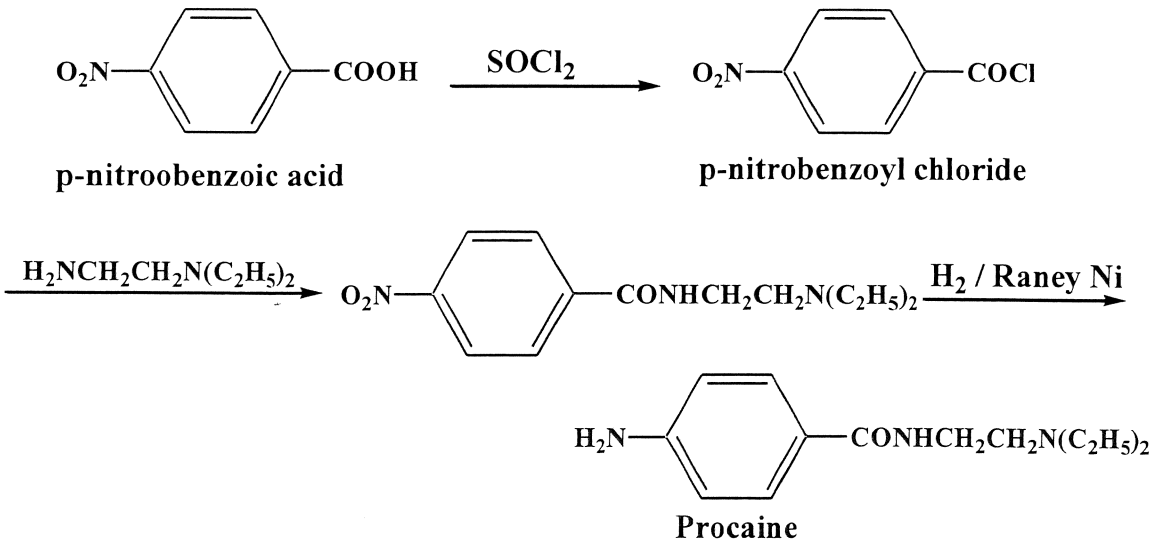
Synthesis of topical anesthetic Benzocaine

2- From p-nitrobenzoic acid

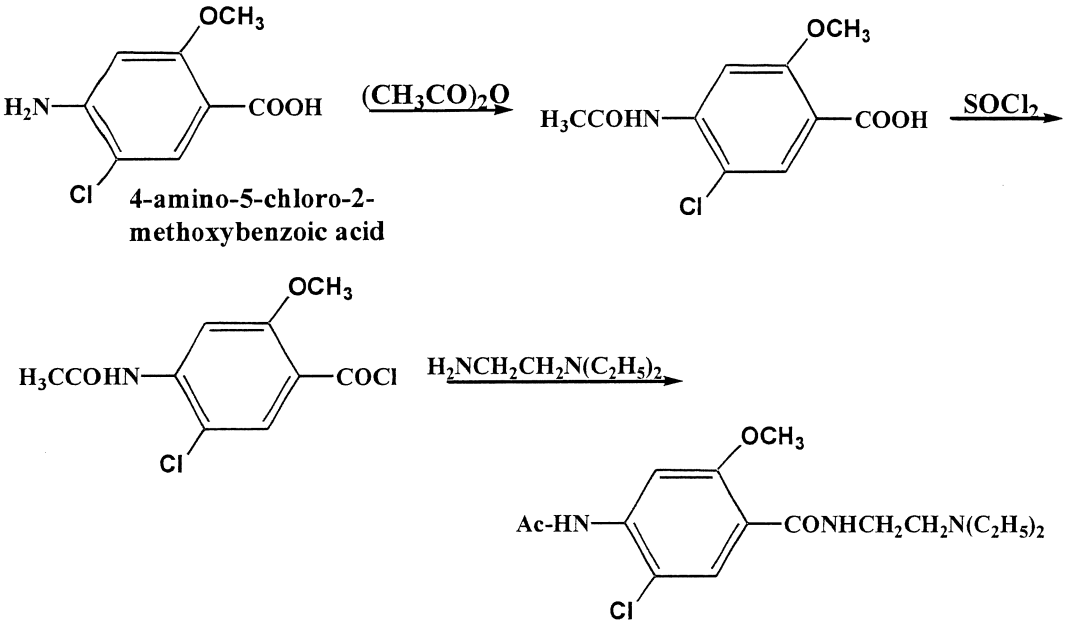


Synthesis of antiarrythmic procainamide

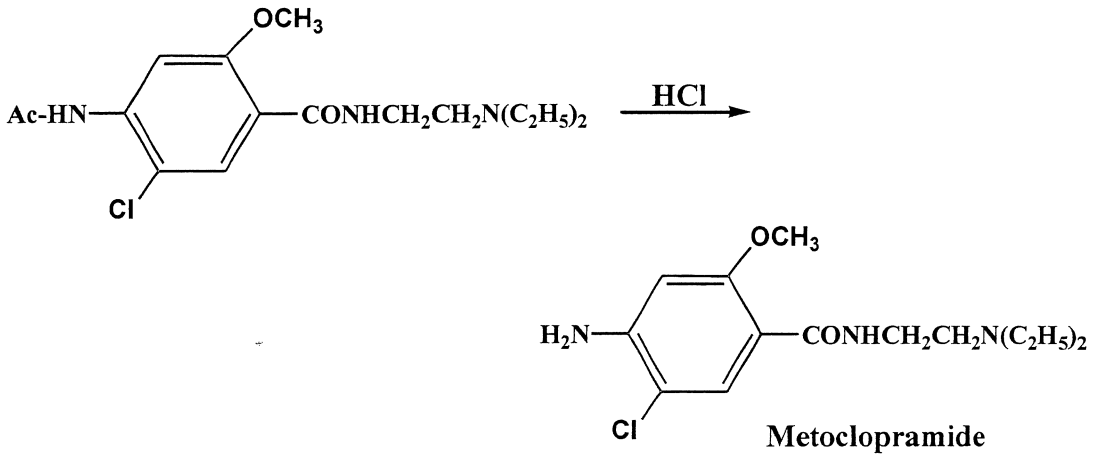


4-amino-*N-[2- (diethylamino)ethyl]benzamide*

Synthesis of Anti- Emetic Metoclopramide



Continue,Synthesis of anti-emetic Metoclopramide

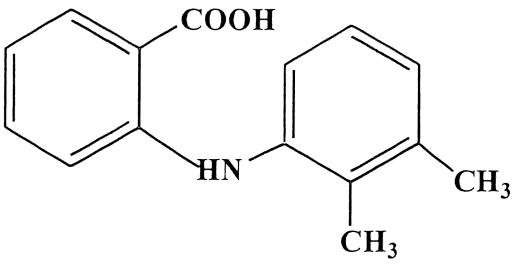


4-amino-5-chloro-*N-(2- diethylaminoethyl)-2-methoxybenzamide*

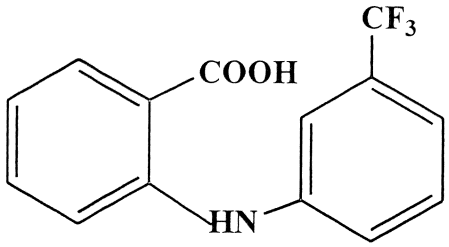
Synthesis of o-aminobenzoic acid (Anthranilic acid) derivatives

NSAID's Anthranylic acid derivatives
- Mefenamic acid
- Flufenamic acid
- Meclofenamic acid
- Niflumic acid

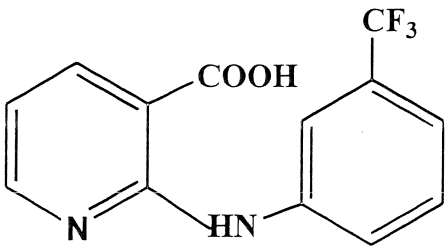
Anthranilic acid derivatives



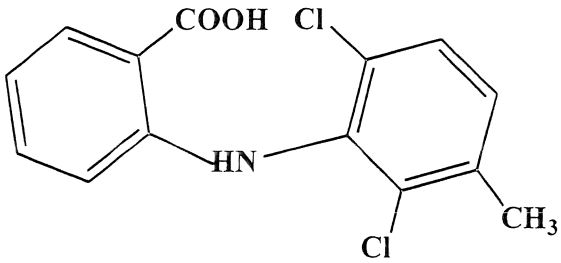
Mefenamic acid



Flufenamic acid

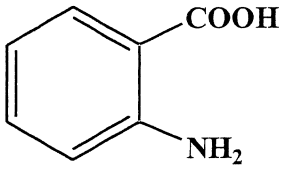


Niflumic acid

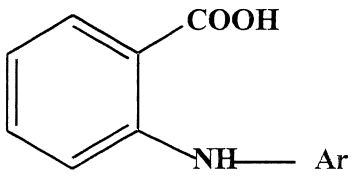


Meclofenamic acid

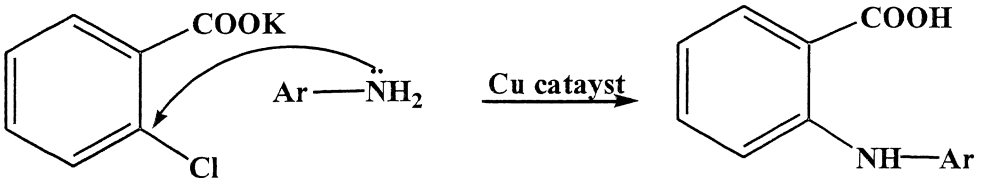
Synthesis of Anthranilic acid derivatives



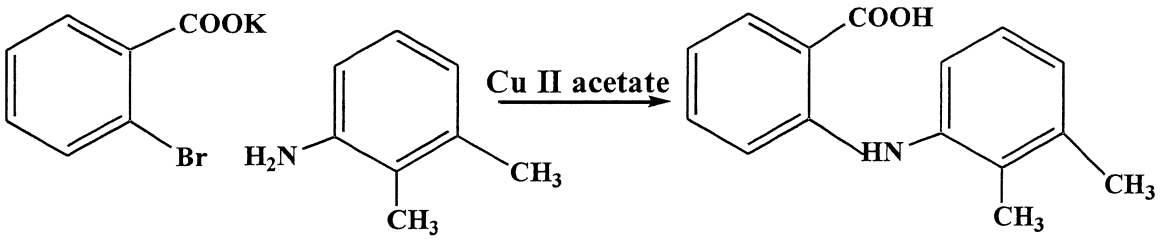
Anthranilic acid



Anthranilic acid derivatives



Synthesis of Mefenamic acid

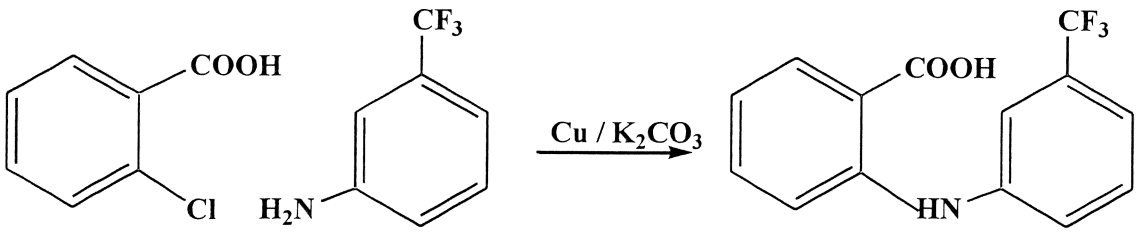


Mefenamic acid

Action and use of Mefenamic acid

- Analgesic (for the pain of dysmenorhea) , fever reducing ,anti-inflammatory
- Synonyms: ponstan

Synthesis of Flufenamic acid



Flufenamic acid

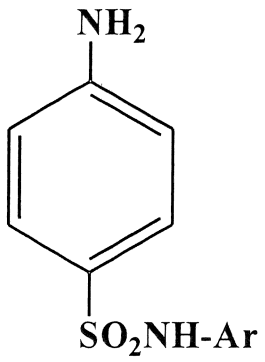
Action and use of Flufenamic acid

- Analgesic(for the pain of dysmenorhea) , fever reducing ,anti-inflammatory
- Synonym: Arlef

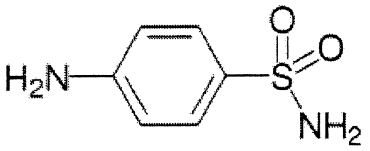
Drug Synthesis
الاصطناع (التخليق) الدوائي

15. p-aminobenzenesulfonic acid derivatives: Antibacterial Sulfonamides

General Structure Of antibacterial Sulfonamides

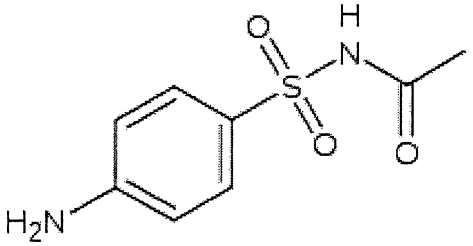


Nomenclature



4-aminobenzenesulfonamide

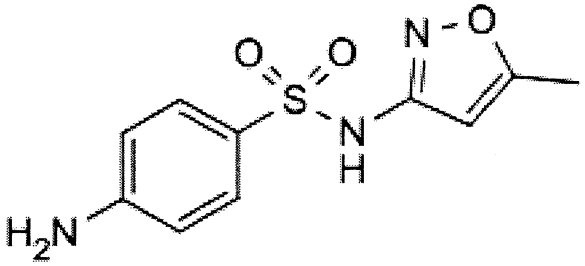
(Sulfanilamide)



***N*-[(4-aminophenyl)sulfonyl]acetamide**

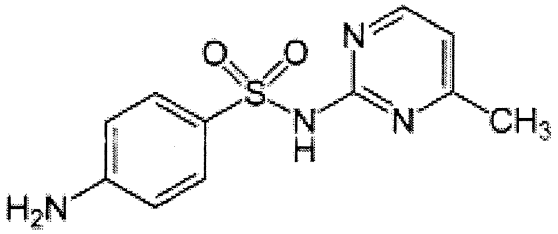
(Sulfacetamide)

Nomenclature



4-Amino-*N*-(5-methylisoxazol-3-yl)-benzenesulfonamide

(Sulfamethoxazole)

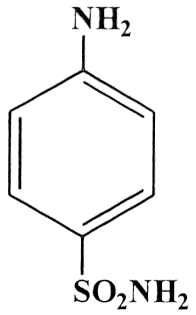


4-amino-*N*-(4-methylpyrimidin-2-yl) benzenesulfonamide

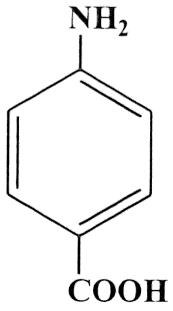
(Sulfamerazine)

Anti-bacterial action

- Sulfonamides inhibit bacterial growth (bactereostaic)
- P-aminobenzenesulfonamide is structure analogue of p- aminobenzoic acid
- This results in the formation of false folic acid in bacteria



4-aminobenzenesulfonamide



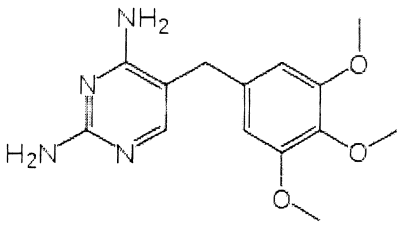
4-aminobenzoic acid

Anti-bacterial action

Synergistic

Sulfonamides ↓ **Trimethoprim** ↓

Pteridine Diphosphat $\xrightarrow{\text{PABA}}$ → **FAH2** $\xrightarrow{\text{Folate reductase}}$ **FAH4**



Trimethoprim

↑ **Folate reductase**

FA(diet)
Humans & Animals

Classification

Subdivided into:

-Short- lasting: sulfadiazine, sulfamerazine, sulfisoxazole

- Moderate –lasting: sulfamethoxazole, sulfapyridine

- Long-lasting: sulfadoxine

Classification

According to their use:

-Systemic sulfonamides: sulfamethoxazol..

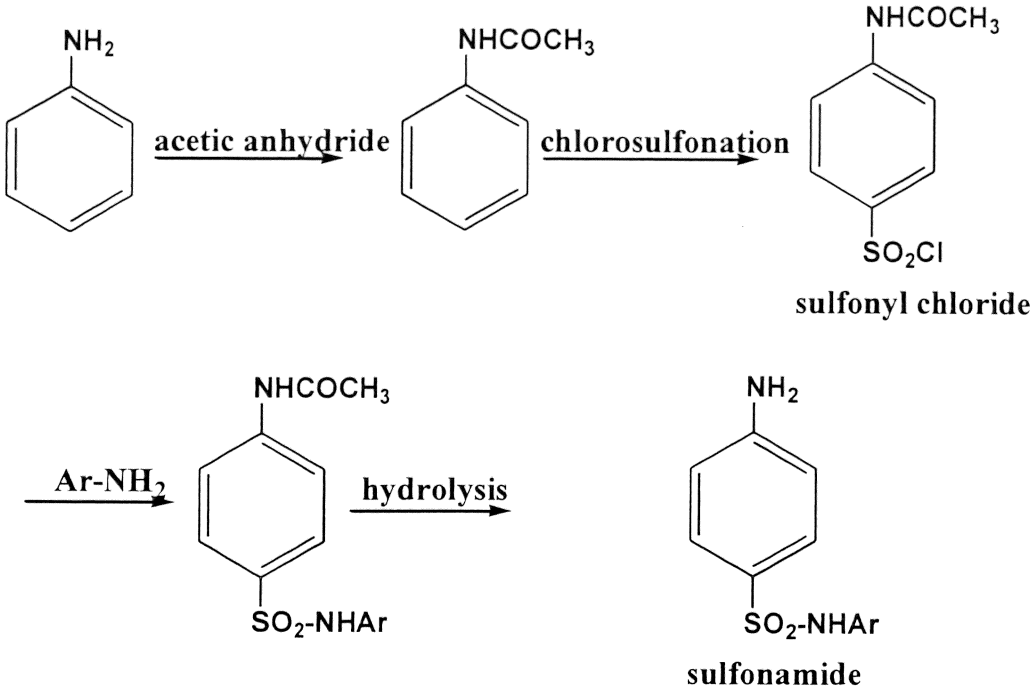
- Local sulfonamides in gastro-intestinal tract: sulfasalazine.. for Ulcerocolitis

-Ophthalmic sulfonamides: sulfacetamide

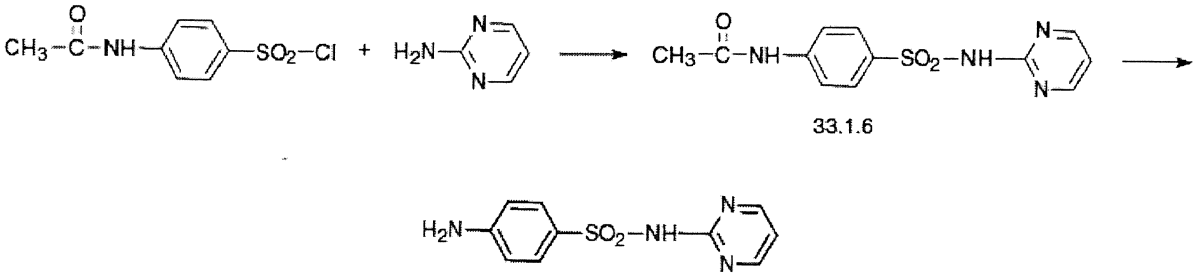
- Vaginal sulfonamides: sulfabenzamide, sulfathiazol, sulfacetamide ...

- For burn therapy: silver sulfadiazine, maphenid

General Method Of Synthesis

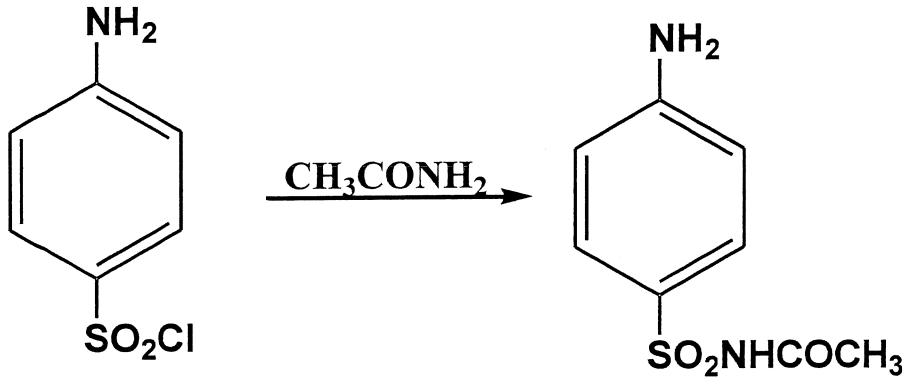


Synthesis Of Sulfadiazine



4-amino-*N*-pyrimidin- 2-yl-benzenesulfonamide

Synthesis Of Sulfacetamide



Synthesis Of Sulfacetamide