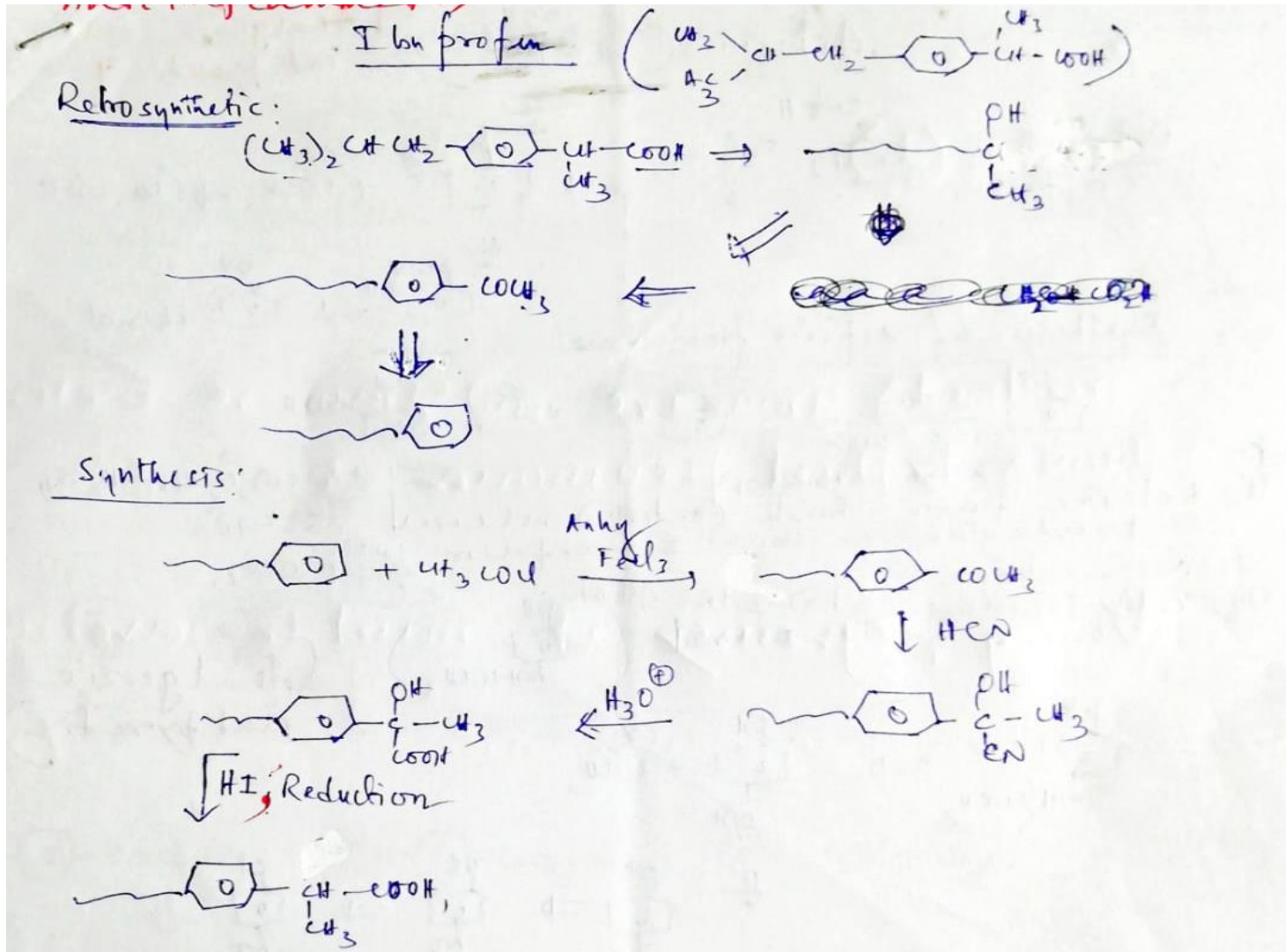
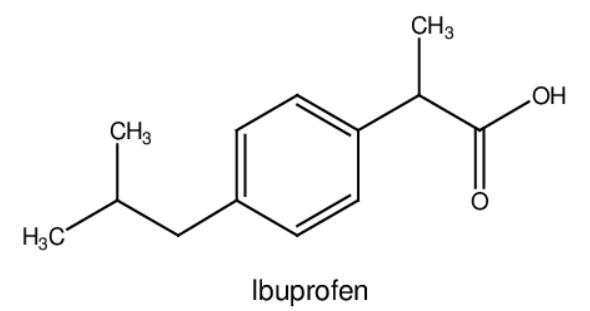


# Synthesis, Retrosynthesis & Uses of some drugs-1

3<sup>rd</sup> Sem B.Sc Hons - SEC-1 T ( Pharmaceutical Chemistry)

**Dr. Indranil Chakraborty**

# Ibuprofen (Anti inflammatory drug)

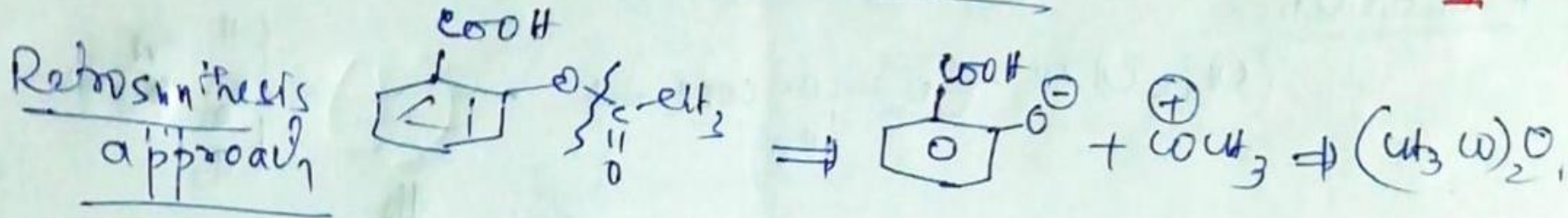
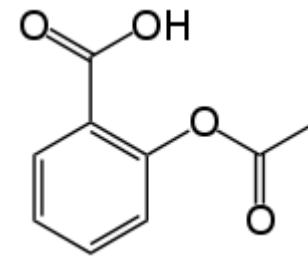


Use: (i) Selectively blocks the enzyme release from prostaglandin that cause pain sensation.

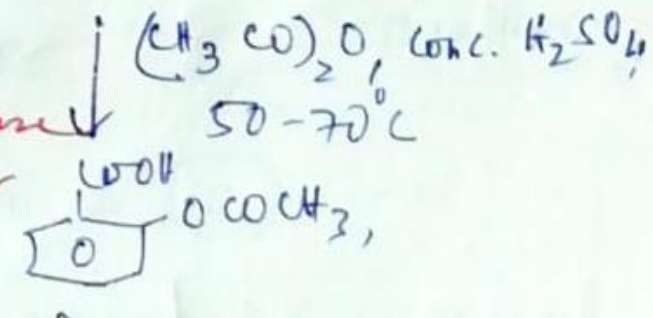
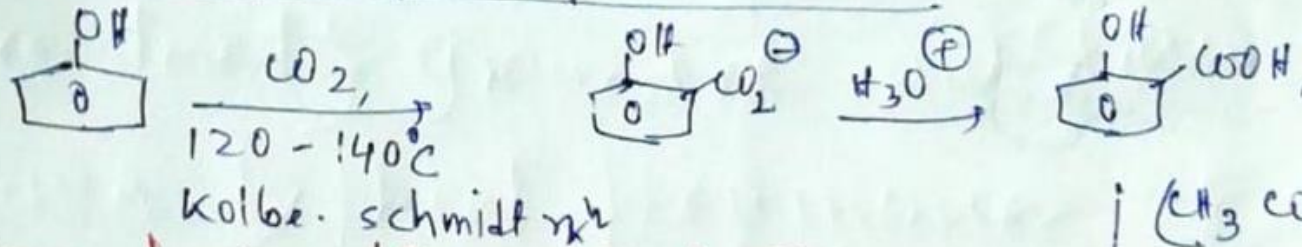
## USES OF IBUPROFEN

- IBUPROFEN IS PRIMARILY USED FOR FEVER, PAIN, DYSSMENORRHEA (MENSTRUAL PAIN)
- IT IS ALSO USED DURING INFLAMMATORY DISEASES LIKE RHEUMATOID ARTHRITIS
- IT IS USED FOR PERICARDITIS AND PATENT DUCTUS ARTERIOSUS

# Aspirin (Analgesic & Antipyretic drug)



## Synthesis of Aspirin from Phenol



\*

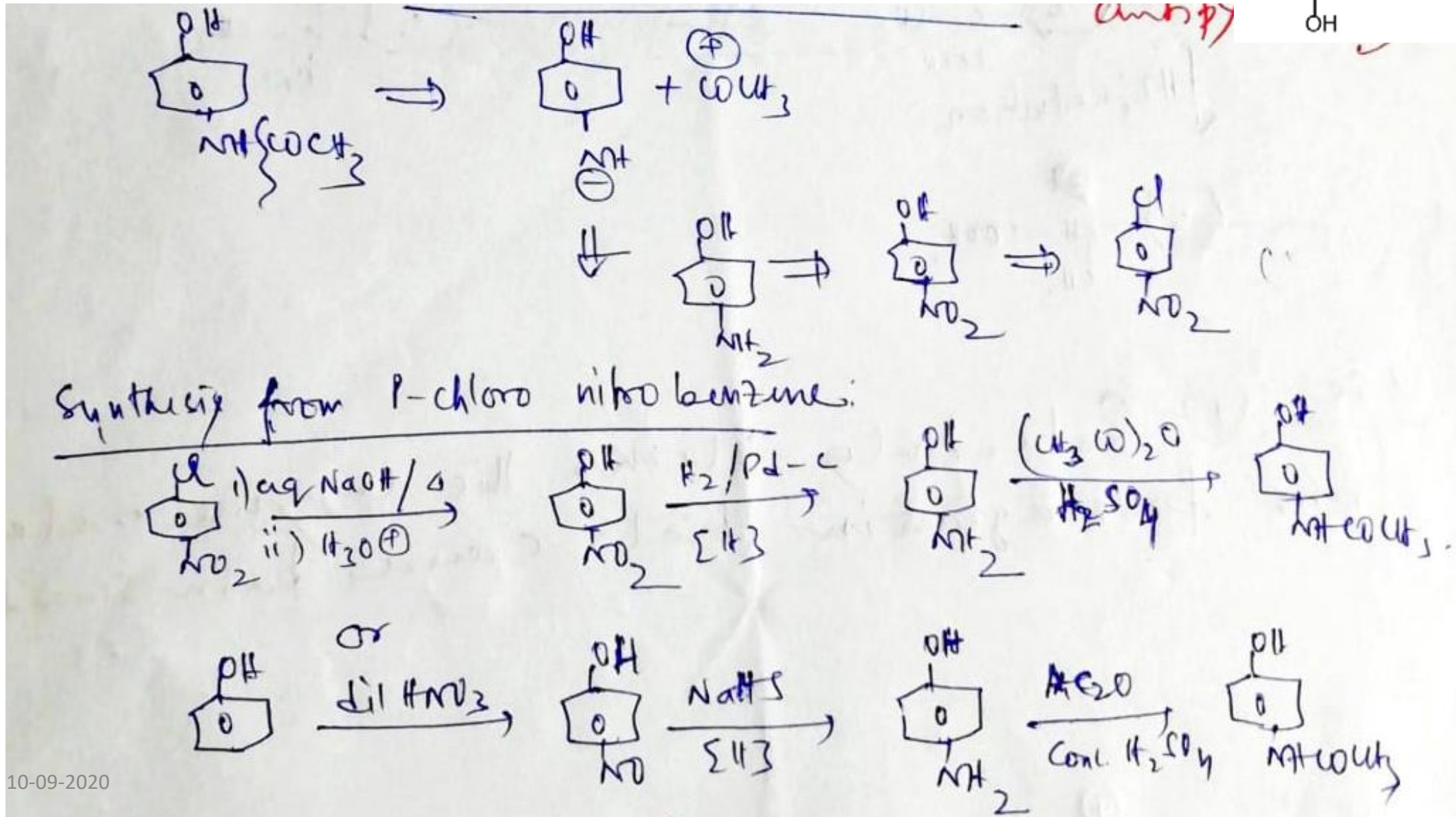
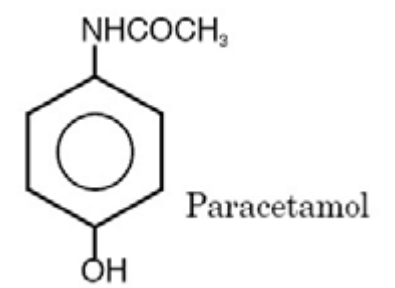
- (i) Relieve pain through controlled release of prostaglandin which senses pain
- (ii) Reduce fever
- (iii) Reduce blood platelet flow



## Uses of Aspirin

- As analgesic (300 to 600 mg during 6 to 8 h) for headache, backache, pulled muscle, toothache, neuralgias.
- As antipyretic in fever of any origin in the same doses as for analgesia. However, *paracetamol and metamizole are safer*, and generally preferred.
- Acute rheumatic fever. *Aspirin is the first drug of choice. Other drugs substitute Aspirin only when it fails or in severe cases.* Antirheumatic doses are 75 to 100 mg/kg/24 h (resp. 4–6 g daily) in the first weeks.
- Rheumatoid arthritis. Aspirin a dose of 3 to 5 g/24 h *after meal* is effective in most cases. Since large doses of Aspirin are poorly tolerated for a long time, the new NSAIDs (diclofenac, ibuprofen, etc.) in depot form are preferred.

# Paracetamol (Analgesic & Antipyretic drug)



# PARACETAMOL USES

## 1. Fever

It is widely prescribed to relieve fever in person of all ages. Paracetamol is prescribed in children if temperature is greater than 38.5 Celsius or 101.3 Fahrenheit.

## 2. Pain

It is also prescribed to relieve mild to moderate pain.

## 3. Osteoarthritis

Some studies state that paracetamol is also used to treat arthritis pain of knee, hand or hips.

## 4. Lower Back Pain

It is first line treatment of lower back pain.

## 5. Headache

Swiss, Austrian and German headache societies state that Paracetamol with caffeine is also used in Headache. In India paracetamol is also prescribed to relieve headache. Paracetamol is also used to relieve migraine in some countries.

## 6. Toothache

Some studies show that paracetamol is also used in pain of tooth.

## 7. Menstrual Period Pain

Paracetamol is often prescribe with Dicyclomine Hydrochloride or Mefenamic Acid to relieve pain during menstrual period.

## 8. Cold / Flu Pain

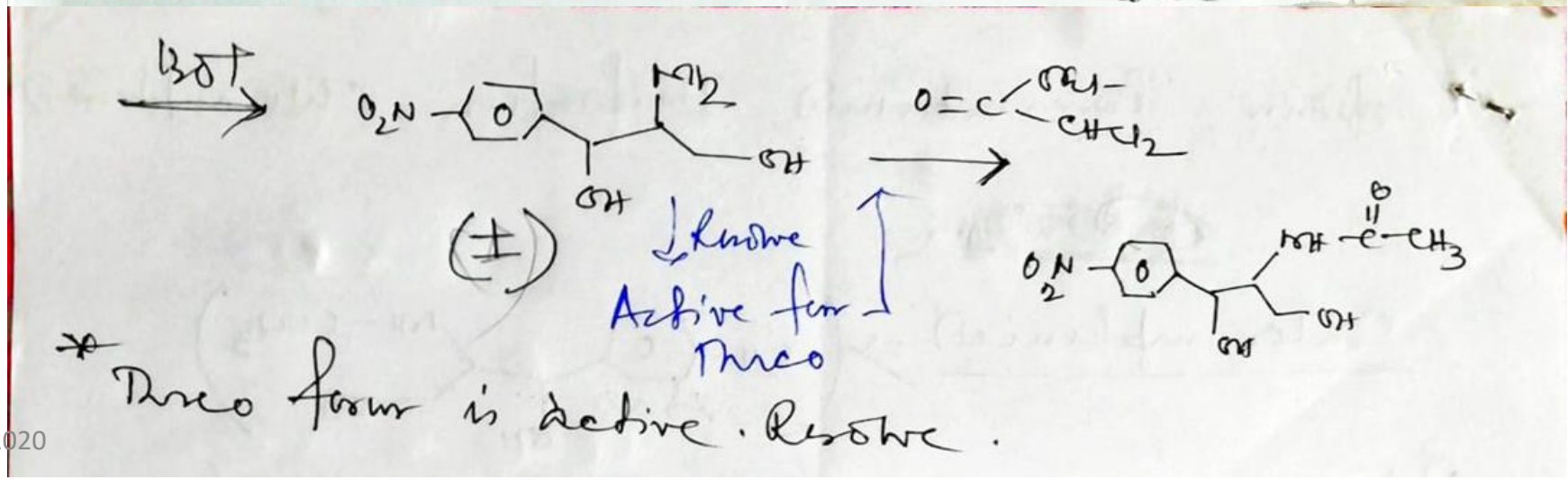
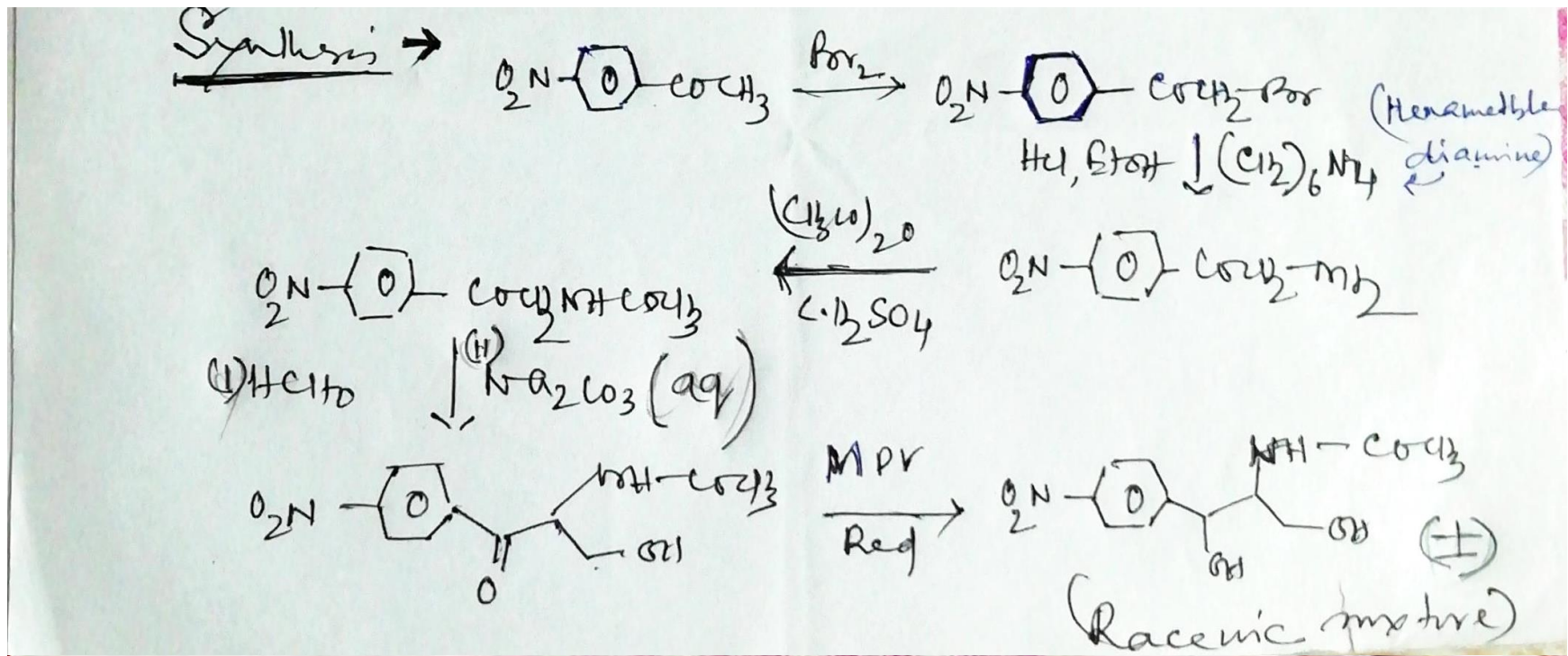
Paracetamol is also prescribed with Anti-Cold medicine to relieve Cold / Flu Pain.







# Cloramphenicol



# Use of Chloramphenicol

- Chloramphenicol is a **broad-spectrum** antibiotic that is active against **both aerobic and anaerobic gram-positive and gram-negative organisms**
- It binds reversibly to the 50S of bacterial ribosomes
- It is active also against **rickettsiae**
- The drug is either **bactericidal** or (more commonly) **bacteriostatic**, depending on the **organism**

## Clinical Uses

- Topically in the treatment of **eye infections** b/c of its broad spectrum and its penetration of ocular tissues and the aqueous humor

## Use of chloramphenicol

① Treatment of Gram +ve and Gram -ve bacteria  
influenza, typhoid, pneumonia etc.

= During pregnancy it must be avoided