International Islamic University Chittagong

Department of Pharmacy

Assignment on Non-Steroidal Anti-Inflammatory Drugs

Course Information

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Date of submission</th>
</tr>
</thead>
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<tr>
<td>PHARM-2405</td>
<td>Pharmacology-I</td>
<td>16 June 2012</td>
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</tbody>
</table>

Submitted By:
Md. Areeful Haque
Matric NO: P103002
4th Semester

Submitted To:
Mr. Md. Mominur Rahman
Lecturer,
Dept. of Pharmacy, IIUC
Most NSAIDs act as nonselective inhibitors of the enzyme cyclooxygenase (COX), inhibiting both the cyclooxygenase-1 (COX-1) and cyclooxygenase-2 (COX-2) isoenzymes. COX catalyzes the formation of prostaglandins and thromboxane from arachidonic acid (itself derived from the cellular phospholipid bilayer by phospholipase A₂).

Prostaglandins act (among other things) as messenger molecules in the process of inflammation.

NSAIDs have antipyretic activity and can be used to treat fever. Fever is caused by elevated levels of prostaglandin E₂, which alters the firing rate of neurons within the hypothalamus, that control thermoregulation. Antipyretics work by inhibiting the enzyme COX, which causes the general inhibition of prostanoid biosynthesis (PGE₂) within the hypothalamus. PGE₂ signals to the hypothalamus to increase the body's thermal set point. Arachidonic acid is the precursor substrate for cyclooxygenase leading to the production of prostaglandins F, D & E.

**Fig:** Mechanism of action of NSAIDs
**Paracetamol**

Acetaminophen, also known as paracetamol, is commonly used for its analgesic and antipyretic effects. Its therapeutic effects are similar to salicylates, but it lacks anti-inflammatory, antiplatelet, and gastric ulcerative effects.

<table>
<thead>
<tr>
<th><strong>IUPAC Name</strong></th>
<th>N-(4-hydroxyphenyl) acetamide</th>
</tr>
</thead>
</table>
| **Indication** | For temporary relief of fever and minor aches and pains including:  
  → Neuritis  
  → Neuralgia  
  → Headache  
  → Toothache  
  → Earache  
  → Body ache  
  → Myalgia  
  → Minor arthritic pain  
  → Dismenorrhoea |
| **Contraindication** | → Severe renal function impairment & hepatic disease  
  → Hypersensivity to the drug |
| **Adverse Effect** | → Thrombocytopenia  
  → Leucopenia  
  → Pancytopenia  
  → Neutropenia  
  → Pancreatitis  
  → Skin rashes  
  → Other allergic reactions |
| **Dose** | o Adult: 0.5-1gm 4-6 times/day, max 4gm in 24 hrs.  
  o Children: (syrup)  
    3months-1yr: 60-120mg (1/2-1 tsp)  
    1-5 yrs: 1-2 tsp  
    6-12 yrs: 2-4 tsp |
| **Market Preparation** | o ACE - Square Pharmaceuticals Ltd.  
  o NAPA - Beximco Pharmaceuticals Ltd.  
  o RESET - Incepta Pharmaceuticals Ltd.  
  o TAMEN - Eskayef Bangladesh Ltd.  
  o SINAPOL - Ibn Sina Pharmaceutical Ind. Ltd.  
  o XPA - Aristopharma Ltd.  
  o PARAPYROL - GlaxoSmithKline Bangladesh Ltd. |
Aspirin

Aspirin or acetylsalicylic acid is a prototypical analgesic used in the treatment of mild to moderate pain. It has anti-inflammatory and antipyretic properties and acts as an inhibitor of cyclooxygenase which results in the inhibition of the biosynthesis of prostaglandins. Acetylsalicylic acid also inhibits platelet aggregation and is used in the prevention of arterial and venous thrombosis.

<table>
<thead>
<tr>
<th>IUPAC Name</th>
<th>2-(acetyloxy) benzoic acid</th>
</tr>
</thead>
</table>

**Indication**
- For use in the temporary relief of various forms of pain, inflammation associated with various conditions including-
  - Rheumatoid arthritis
  - Juvenile rheumatoid arthritis
  - Systemic lupus erythematosus
  - Osteoarthritis
  - Ankylosing spondylitis
  - Also used to reduce the risk of death and/or nonfatal myocardial infarction in patients with a previous infarction or unstable angina pectoris

**Contraindication**
- Active peptic ulceration
- Breast feeding mother
- Haemophilia & other bleeding disorders
- Patients with asthma
- Hypersensivity to the drug

**Adverse Effect**
- Nausea
- Dyspepsia
- Gastrointestinal ulceration
- Gastrointestinal haemorrhage
- Bronchospasm
- Tinnitus

**Dose**
- Adult: 300-900mg in water, 4-6 hourly when necessary (usually after meal); max 4gm/day
- Children under 12 yrs: not recommended

**Market Preparation**
- ANCLOG Plus - Square Pharmaceuticals Ltd.
- ODREL Plus - Beximco Pharmaceuticals Ltd.
- LOPIREL Plus - Incepta Pharmaceuticals Ltd.
- NOCLOG Plus - Eskayef Bangladesh Ltd.
- SOLRIN - Opsonin Pharma Limited
- DISPRIN - Reckitt Benckiser Bangladesh Ltd.
Diclofenac

Diclofenac is a non-steroidal anti-inflammatory agent (NSAID) with antipyretic and analgesic actions. It is primarily available as the sodium salt.

<table>
<thead>
<tr>
<th>IUPAC Name</th>
<th>2-[(2,6-dichlorophenyl)amino]phenyl} acetic acid</th>
</tr>
</thead>
</table>

**Indication**
- Rheumatoid arthritis.
- Osteoarthritis.
- Ankylosing spondylitis.
- Chronic juvenile arthritis.
- Acute gout.
- Sprains.
- Strains.
- Bruises.
- Traumatic inflammation of tendons, ligaments, muscles & joints.

**Contraindication**
- Active peptic ulceration.
- Asthma.
- Hypersensivity to the drug.

**Adverse Effect**
- Gastro-intestinal discomfort.
- Bleeding.
- Nausea.
- Vertigo.
- Headache.
- Hearing disturbances e.g.-tinnitus.
- Bronchospasm.
- Rashes.
- Thrombocytopenia.
- Hypersensivity reactions.

**Dose**
- Adult: 75-150mg/day in 2 or 3 divided doses, preferably after food. Maximum total daily dose by any route 150mg.

**Market Preparation**
- CLOFENAC - Square Pharmaceuticals Ltd.
- ULTRAFEN - Beximco Pharmaceuticals Ltd.
- INTAFENAC 50 - Incepta Pharmaceuticals Ltd.
- VOLMAX SR - Eskayef Bangladesh Ltd.
- FICLON 50 - Sanofi-aventis Bangladesh Limited
- VOLTALIN - Novartis (Bangladesh) Ltd.
Aceclofenac is a non-steroidal anti-inflammatory agent (NSAID) with anti-inflammatory and analgesic actions. It is primarily available as Aceclofenac BP 100mg film-coated tablet.

<table>
<thead>
<tr>
<th>IUPAC Name</th>
<th>[[2-[(2,6-Dichlorophenyl)amino]phenyl]acetyl]oxy]acetic acid.</th>
</tr>
</thead>
</table>

### Indication

- Rheumatoid arthritis.
- Osteoarthritis
- Ankylosing spondylitis
- Dental pain
- Gynecological pain
- Low back pain
- Traumatic pain

### Contraindication

- Active peptic ulceration
- Gastro-intestinal bleeding
- Severe renal impairment
- Hypersensitivity to the drug

### Adverse Effect

- Nausea
- Dyspepsia
- Diarrhoea
- Abdominal pain
- Dizziness
- Pruritus
- Rashes

### Dose

- Adult: max recommended dose is 200mg/day taken in 2 divided doses in the morning & evening.

### Market

- FLEXI - Square Pharmaceuticals Ltd.
- ZOLFIN - Beximco Pharmaceuticals Ltd.
- RESERVIX - Incepta Pharmaceuticals Ltd.
### Ibuprofen

Ibuprofen, a propionic acid derivative, is a prototypical nonsteroidal anti-inflammatory agent (NSAIA) with analgesic and antipyretic properties.

<table>
<thead>
<tr>
<th><strong>IUPAC Name</strong></th>
<th>2-[4-(2-methylpropyl)phenyl]propanoic acid</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Indication</strong></th>
<th>➔ Rheumatoid arthritis, ➔ Juvenile rheumatoid arthritis and osteoarthritis ➔ Ankylosing spondylitis ➔ Dysmenorrhea ➔ Fever ➔ Gout ➔ Peri-articular disorders ➔ Bursitis ➔ Tendinitis ➔ Sprains ➔ Strains</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Contraindication</strong></th>
<th>➔ Active peptic ulceration ➔ Hypersensivity to the drug</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Adverse Effect</strong></th>
<th>➔ Gastro-intestinal discomfort ➔ Bleeding ➔ Precipitation of bronchial asthma or allergic reactions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Dose</strong></th>
<th>o Adult: 600-1200mg daily in divided doses Max 2400mg/daily o Children: 1-2 yrs: ½ tsp 3-4 times/day 3-7 yrs: 1 tsp 3-4 times/day 8-12 yrs: 2 tsp 3-4 times/day</th>
</tr>
</thead>
</table>

### Preparation
- TUFFOX - Eskayef Bangladesh Ltd.
- PRESERVIN - Ibn Sina Pharmaceutical Ind. Ltd.
- MOVEX - Opsonin Pharma Limited
<table>
<thead>
<tr>
<th>Market Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>❖ XFLAM - Square Pharmaceuticals Ltd.</td>
</tr>
<tr>
<td>❖ DEXIFEN - Beximco Pharmaceuticals Ltd.</td>
</tr>
<tr>
<td>❖ PURIFEN - Incepta Pharmaceuticals Ltd.</td>
</tr>
<tr>
<td>❖ INFLAM - Sanofi-aventis Bangladesh Limited</td>
</tr>
<tr>
<td>❖ ARTOFLEX - Opsonin Pharma Limited</td>
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</tbody>
</table>

**KETOPROFEN**

Ketoprofen, a propionic acid derivative, is a nonsteroidal anti-inflammatory agent (NSAIA) with analgesic and antipyretic properties.

<table>
<thead>
<tr>
<th>IUPAC Name</th>
<th>2-(3-benzoylphenyl)propanoic acid</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>➔ Rheumatoid arthritis</td>
</tr>
<tr>
<td>➔ Osteoarthritis</td>
</tr>
<tr>
<td>➔ Ankylosing spondylitis</td>
</tr>
<tr>
<td>➔ Primary dysmenorrhea</td>
</tr>
<tr>
<td>➔ Articular &amp; peri-articular disorders</td>
</tr>
<tr>
<td>➔ Mild to moderate pain associated with musculotendinous trauma (sprains and strains),</td>
</tr>
<tr>
<td>➔ Postoperative (including dental surgery) or postpartum pain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contraindication</th>
</tr>
</thead>
<tbody>
<tr>
<td>➔ Active peptic ulceration</td>
</tr>
<tr>
<td>➔ Asthma</td>
</tr>
<tr>
<td>➔ Recent proctitis</td>
</tr>
<tr>
<td>➔ Aspirin or any non-steroidal anti-inflammatory induced allergy</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Adverse Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>➔ Gastro-intestinal discomfort</td>
</tr>
<tr>
<td>➔ Haemorrhage (rare)</td>
</tr>
<tr>
<td>➔ Skin rash</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Dose</th>
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</thead>
<tbody>
<tr>
<td>➔ In rheumatic disease: 100-200mg daily in 2-4 divided doses with food</td>
</tr>
<tr>
<td>➔ In pain &amp; dysmenorrhea: 50gm upto 3 times daily with food</td>
</tr>
<tr>
<td>Market Preparation</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>• KOP - Square Pharmaceuticals Ltd.</td>
</tr>
<tr>
<td>• XYNOFEN SR cap. - Beximco Pharmaceuticals Ltd.</td>
</tr>
<tr>
<td>• WAKOFLEX inj. - Incepta Pharmaceuticals Ltd.</td>
</tr>
<tr>
<td>• PROFENID-E - Sanofi-aventis Bangladesh Limited</td>
</tr>
<tr>
<td>• KYNOL TR cap. - Eskayef Bangladesh Ltd.</td>
</tr>
</tbody>
</table>

**neproxen**

Neproxen is an anti-inflammatory agent with analgesic and antipyretic properties. Both the acid and its sodium salt are used in the treatment of rheumatoid arthritis and other rheumatic or musculoskeletal disorders, dysmenorrhea, and acute gout.

<table>
<thead>
<tr>
<th>IUPAC Name</th>
<th>(2S)-2-(6-methoxynaphthalen-2-yl)propanoic acid</th>
</tr>
</thead>
</table>

### Indication

- Rheumatoid arthritis.
- Osteoarthritis.
- Ankylosing spondylitis.
- Acute gout.
- Dysmenorrhea.
- Tendinitis.
- Bursitis.

### Contraindication

- Active peptic ulceration.
- Aspirin or any non-steroidal anti-inflammatory induced allergy.

### Adverse Effect

- GI discomfort.
- Nausea.
- Vertigo.
- Bleeding.
- Headache.
- Tinnitus.
- Thrombocytopenia.
- Hypersensitivity reactions (rashes, bronchospasm).

### Dose

- **Adult:** for rheumatoid arthritis, osteoarthritis, ankylosing spondylitis - 250-500mg twice/day or 500mg once/day
- **Child:** under 5 yrs not recommended
**INDOMETHACIN**

Indomethacin is a non-steroidal antiinflammatory agent with anti-inflammatory, analgesic and antipyretic activity. Its pharmacological effect is mediated through the inhibition of the enzyme cyclooxygenase, the enzyme responsible for catalyzes the rate-limiting step in prostaglandin synthesis via the arachidonic acid pathway.

<table>
<thead>
<tr>
<th>IUPAC Name</th>
<th>2-[(4-chlorophenyl)carbonyl]-5-methoxy-2-methyl-1H-indol-3-yl]acetic acid</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>→ Rheumatoid arthritis</td>
</tr>
<tr>
<td>→ Osteoarthritis</td>
</tr>
<tr>
<td>→ Ankylosing spondylitis</td>
</tr>
<tr>
<td>→ Acute gouty arthritis.</td>
</tr>
<tr>
<td>→ Musculo-skeletal disorders (bursitis and/or tendinitis)</td>
</tr>
<tr>
<td>→ Acute peri-articular disorders</td>
</tr>
<tr>
<td>→ Dysmenorrhea</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contraindication</th>
</tr>
</thead>
<tbody>
<tr>
<td>→ Active peptic ulceration</td>
</tr>
<tr>
<td>→ Aspirin or any non-steroidal anti-inflammatory induced allergy</td>
</tr>
<tr>
<td>→ Recent proctitis</td>
</tr>
<tr>
<td>→ Pregnancy</td>
</tr>
<tr>
<td>→ Lactation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adverse Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>→ Headache</td>
</tr>
<tr>
<td>→ Dizziness</td>
</tr>
<tr>
<td>→ Nausea</td>
</tr>
<tr>
<td>→ Vomitting</td>
</tr>
<tr>
<td>→ Epigastic &amp; abdominal pain</td>
</tr>
<tr>
<td>→ Diarrhoea</td>
</tr>
<tr>
<td>→ Hepatitis</td>
</tr>
<tr>
<td>→ Jaundices</td>
</tr>
<tr>
<td>→ Haematuria</td>
</tr>
</tbody>
</table>

**Market Preparation**

- SONAP - Square Pharmaceuticals Ltd.
- NUPRAFEN - Beximco Pharmaceuticals Ltd.
- TICOFLEx - Incepta Pharmaceuticals Ltd.
- NAPROX - Eskayef Bangladesh Ltd.
- ANAFLEX - ACI Ltd.
- NAXIN - Opsonin Pharma Limited
<table>
<thead>
<tr>
<th>Table</th>
<th>Content</th>
</tr>
</thead>
</table>
| **Dose** | o Adult : 50-200mg daily in divided doses with food, milk or antacid  
| | o Children: not recommended  
| **Market Preparation** | ¬ INDOMET - Opsonin Pharma Limited  
| | ¬ INDOMAX - Ziska Pharmaceuticals Ltd.  
| | ¬ INDOCAP - Asiatic Laboratories Ltd.  
| | ¬ REUMACAP - Aristopharma Ltd.  
| | ¬ SERVIMETA - Novartis (Bangladesh) Ltd.  

## Ketorolac
Ketorolac is a pyrrolizine carboxylic acid derivative structurally related to indomethacin. It is an NSAID and is used principally for its analgesic activity.

### IUPAC Name
5-benzoyl-2,3-dihydro-1H-pyrrolizine-1-carboxylic acid

### Indication
Relief of pain associated with surgical procedures such as major abdominal, orthopaedic, dental or gynecological surgery; acute & chronic musculo-skeletal pain, renal colic, cancer pain.

### Contraindication
¬ Active peptic ulceration  
¬ Breast feeding mother  
¬ Pregnant women  
¬ Coagulation disorders  
¬ Hypersensitivity to the drug

### Adverse Effect
¬ Nausea  
¬ Vomitting  
¬ Dyspepsia  
¬ Diarrhoea  
¬ Peptic ulcer  
¬ Haemorrhage  
¬ Dizziness  
¬ Drowsiness  
¬ Convulsions  
¬ Acute renal failure  
¬ Hypersensitivity reactions (anaphylaxis, hypotension,
### Mefenamic acid

Mefenamic acid is a non-steroidal anti-inflammatory agent with analgesic, anti-inflammatory, and antipyretic properties. It is an inhibitor of cyclooxygenase.

<table>
<thead>
<tr>
<th>IUPAC Name</th>
<th>2-[(2,3-dimethylphenyl)amino] benzoic acid</th>
</tr>
</thead>
</table>

#### Indication
- Rheumatoid arthritis
- Osteoarthritis
- Dysmenorrhea
- Menorrhagia
- Headache
- Mild to moderate pain
- Inflammation
- Fever

#### Contraindication
- Active peptic ulceration
- Inflammatory bowel disease
- Renal or hepatic impairment
- Pregnant women
- Hypersensivity to the drug

#### Side Effects
- Occasional ulceration
- Dizziness

#### Dose
- Adult: 10mg every 4-6 hourly; max 40mg/day
- Child: under 16 years not recommended

#### Market Preparation
- TORAX 10 -Square Pharmaceuticals Ltd.
- PDOLOC-Beximco Pharmaceuticals Ltd.
- ETORAC -Incepta Pharmaceuticals Ltd.
- KETONIC -Eskayef Bangladesh Ltd.
- ZEPAC -Novartis (Bangladesh) Ltd.
- ETOLAC -Ibn Sina Pharmaceutical Ind. Ltd.

<table>
<thead>
<tr>
<th>Rash, bronchospasm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oedema</td>
</tr>
<tr>
<td>Purpura</td>
</tr>
<tr>
<td>Myalgia</td>
</tr>
</tbody>
</table>
**Adverse Effect**
- Drowsiness
- Rashes
- Bronchospasm
- Hypersensitivity reactions

**Dose**
- Adult: 500mg 3 times daily after food
- Child: under 6 months not recommended

**Market Preparation**
- FENAMIC - Beximco
- FLAMIC - Globe
- HPR - Pacific
- MEFA - Salton
- MEFALGIN - Cosmic

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**Etoricoxib**

Etoricoxib is a new COX-2 selective inhibitor. Like any other COX-2 selective inhibitor, Etoricoxib selectively inhibits isoform 2 of cyclo-oxygenase enzyme (COX-2). This reduces the generation of prostaglandins (PGs) from arachidonic acid.

**IUPAC Name**
5-chloro-3-(4-methanesulfonylphenyl)-2-(6-methylpyridin-3-yl) pyridine

**Indication**
- Rheumatoid arthritis
- Acute gouty arthritis
- Osteoarthritis
- Ankylosing spondylitis
- Chronic musculo-skeletal pain
- Chronic low back pain
- Primary dismenorrhea

**Contraindication**
- Active peptic ulceration or GI bleeding
- Severe hepatic dysfunction
- Severe congestive heart failure
- Hypersensitivity to the drug

**Adverse Effect**
- Drowsiness
- Rashes
- Bronchospasm
- Hypersensitivity reactions
- GI disorders
- Nausea
- Vomiting
- Flatulence
- Dyspepsia
### Adverse Effect
- Diarrhoea
- Dizziness
- Headache
- Abdominal pain
- Heartburn
- Asthenia
- Flue-like symptoms
- Fatigue

### Dose
- Adult over 16 years:
  - Rheumatoid arthritis: 90mg once/day
  - Acute gouty arthritis: 120mg once/day
  - Osteoarthritis: 60mg once/day

### Market Preparation
- TORY - Square Pharmaceuticals Ltd.
- ORICOX - Incepta Pharmaceuticals Ltd.
- ETORIX - Eskayef Bangladesh Ltd.
- RITO - Opsonin Pharma Limited
- COXIA - ACI Ltd.

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**celecoxib**

Celecoxib is a non-steroidal anti-inflammatory agent (specific COX-2 inhibitor) used in the treatment of osteoarthritis, rheumatoid arthritis, acute pain, painful menstruation and menstrual symptoms, and to reduce numbers of colon and rectum polyps in patients with familial adenomatous polyposis. Celecoxib is available by prescription in capsule form.

### IUPAC Name
4-[5-(4-methylphenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl]benzene-1-sulfonamide

### Indication
- Rheumatoid arthritis
- Osteoarthritis
- Ankylosing spondylitis
- Acute pain
- Primary dismenorrhoea
- Oral adjunct to usual care for patients with familial adenomatous polyposis (FAP)

### Contraindication
- Asthma
- Urticaria
- Pregnancy
- Hypersensitivity to the drug
### Adverse Effect
- Nausea
- Dyspepsia
- Diarrhoea
- Flatulence
- Dizziness
- Headache
- Abdominal pain
- Skin rash
- Peripheral oedema

### Dose
Adult over 18 years: For-
- Rheumatoid arthritis: 100-200mg twice/day
- Osteoarthritis: 100mg twice/day

### Market Preparation
- CELECOX - Square Pharmaceuticals Ltd.
- COX B-100 - Beximco Pharmaceuticals Ltd.
- CELENTA - Incepta Pharmaceuticals Ltd.
- ACICOX - ACI Ltd.
- COXIB - Alco Pharma

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### ROFECoxib
Rofecoxib is a non-steroidal anti-inflammatory agent having anti-inflammatory & analgesic properties. On September 30, 2004, Merck voluntarily withdrew rofecoxib from the market because of concerns about increased risk of heart attack and stroke associated with long-term, high-dosage use.

### IUPAC Name
4-(4-methanesulfonylphenyl)-3-phenyl-2,5-dihydrofuran-2-one

### Indication
- Rheumatoid arthritis
- Osteoarthritis
- Acute pain in adults
- Acute migraine
- Dismenorrhea

### Contraindication
- Active peptic ulceration or GI bleeding
- Epilepsy
- Inflammatory bowel disease
- Psychiatric disturbance
- Severe hepatic dysfunction
- Severe congestive heart failure
<table>
<thead>
<tr>
<th><strong>Adverse Effect</strong></th>
<th>→ Hypersensitivity to the drug</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>→ Increased risk of heart attack and stroke associated with long-term, high-dosage use</td>
</tr>
<tr>
<td></td>
<td>→ Panceratitis</td>
</tr>
<tr>
<td></td>
<td>→ Mental &amp; sensory changes</td>
</tr>
<tr>
<td></td>
<td>→ Purpura</td>
</tr>
<tr>
<td></td>
<td>→ Etistaxis</td>
</tr>
<tr>
<td></td>
<td>→ Dyspnea</td>
</tr>
<tr>
<td></td>
<td>→ Dizziness</td>
</tr>
<tr>
<td></td>
<td>→ Headache</td>
</tr>
<tr>
<td></td>
<td>→ Abdominal pain</td>
</tr>
<tr>
<td></td>
<td>→ Allergic reactions</td>
</tr>
<tr>
<td><strong>Dose</strong></td>
<td>o Adult: For-</td>
</tr>
<tr>
<td></td>
<td>Rheumatoid arthritis: 25-50mg/day</td>
</tr>
<tr>
<td></td>
<td>Osteoarthritis: 12.5mg/day</td>
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<tr>
<td></td>
<td>Primary dismenorrhoea: 50mg once upto 5 days</td>
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<tr>
<td></td>
<td>Migraine: 25mg/day</td>
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<tr>
<td></td>
<td>Maximum recommended dose is 50mg per day</td>
</tr>
<tr>
<td><strong>Market Preparation</strong></td>
<td>no market preparation is available now due to the withdrawn of drug</td>
</tr>
</tbody>
</table>