Dextromethorphan HBr
Phenylpropanolamine HCl
Paracetamol

Decolsin®

10 mg / 12.5 mg / 250 mg per 5 mL Suspension
15 mg / 25 mg / 325 mg Capsule
Antitussive / Nasal Decongestant / Analgesic-Antipyretic

℞

FORMULATIONS

Each 5 mL (1 teaspoonful) suspension contains:

Dextromethorphan HBr	10 mg
Phenylpropanolamine HCl	12.5 mg
Paracetamol	250 mg

Each capsule contains:

Dextromethorphan HBr	15 mg
Phenylpropanolamine HCl	25 mg
Paracetamol	325 mg

PRODUCT DESCRIPTIONS

Dextromethorphan HBr + Phenylpropanolamine HCl + Paracetamol (Decolsin®) suspension is a pink-colored, strawberry-mint flavored homogenous suspension.

Dextromethorphan HBr + Phenylpropanolamine HCl + Paracetamol (Decolsin®) capsule comes in a hard gelatin capsule with dark green opaque cap and ivory opaque body.

PHARMACODYNAMICS

Dextromethorphan HBr

Dextromethorphan is a methylated dextroisomer of the Codeine analog, Levorphanol. Unlike Levorphanol, however, it has no significant analgesic properties and does not depress respiration or predispose to addiction.

Dextromethorphan acts centrally by depressing the cough center in the medulla of the brain and therefore elevates the threshold for coughing. Its antitussive potency is nearly equal to that of Codeine.

Phenylpropanolamine HCl

Phenylpropanolamine is a synthetic phenylisopropanolamine sympathomimetic agent. It constricts blood vessels in the nose by stimulating α-adrenergic receptors. This results in shrinkage of swollen mucous membranes, reduction in tissue edema and nasal congestion, and an increase in nasal airway patency.

Paracetamol

Paracetamol exhibits analgesic and antipyretic activity by inhibiting prostaglandin synthesis. It produces analgesia by elevating the pain threshold and antipyresis through its action on the hypothalamic heat regulating center.

In therapeutic doses, the analgesic and antipyretic actions of Paracetamol are comparable to that of aspirin. Paracetamol does not adversely affect platelet function and hemostasis.

PHARMACOKINETICS

Dextromethorphan HBr

Dextromethorphan is rapidly absorbed from the gastrointestinal tract and exerts its effect within 15 to 30 minutes after oral administration. The duration of action is approximately 3 to 6 hours with conventional dosage forms.

Dextromethorphan is metabolized in the liver and excreted as unchanged dextromethorphan and demethylated morphinan compounds. Up to 56% of a dose is excreted in the urine, with about 8% being excreted unchanged in 6 hours.

Phenylpropanolamine HCl

Phenylpropanolamine is readily absorbed from the gastrointestinal tract. Plasma concentrations of the drug required for a therapeutic effect are not known. In one study, peak plasma concentrations of 100 ng/mL were reached within 1 to 2 hours. Concentrations remained greater that 60 ng/mL for 6 hours after oral administration of 50 mg of Phenylpropanolamine to fasting adults.

Animal studies indicate that Phenylpropanolamine is distributed in various tissues, including cerebrospinal fluid and the brain.

Phenylpropanolamine has a half-life of 3 to 6 hours. Small amounts of the drug are slowly metabolized in the liver to an active hydroxylated metabolite. About 80 to 90% of a dose of Phenylpropanolamine is excreted unchanged in the urine within 24 hours.

Paracetamol

Paracetamol is rapidly and almost completely absorbed from the gastrointestinal tract. After oral administration, peak plasma concentrations of Paracetamol are attained within 10 to 60 minutes. After 8 hours, only small amounts of the drug are detectable in plasma.

Paracetamol is rapidly and uniformly distributed into most body tissues. About 25% of Paracetamol in blood is bound to plasma proteins.

Paracetamol has a plasma half-life of 1.25 to 3 hours which may be prolonged after toxic doses or in patients with liver damage. It is metabolized by microsomal enzyme systems in the liver. About 80 to 85% of Paracetamol in the body undergoes conjugation principally with glucuronic acid and to a lesser extent with sulfuric acid. A small amount is conjugated with cysteine and also deacylated, probably to *p*-aminophenol, which can cause methemoglobinemia.

Paracetamol is excreted in urine principally as glucuronide with small amounts of sulfate, mercaptate, and unchanged drug. Approximately 85% of a dose of Paracetamol is excreted in urine as free and conjugated Paracetamol within 24 hours after ingestion.

INDICATIONS

For the relief of cough, clogged nose, postnasal drip, headache, body aches, and fever associated with the common cold, allergic rhinitis, sinusitis, flu, and other minor respiratory tract infections. It also helps decongest sinus openings and passages.

DOSAGE AND ADMINISTRATION

Age Group	Oral Dose of Dextromethorphan HBr + Phenylpropanolamine HCl + Paracetamol (Decolsin®) every 6 hours	
	Suspension	Capsule
2 to 6 years	2.5 mL (1/2 teaspoonful)	–
Children 7 to 12 years	5 mL (1 teaspoonful)	–
Adults and children above 12 years	10 mL (2 teaspoonful)	1

Or, as recommended by a physician.

CONTRAINDICATIONS

- Hypersensitivity to any ingredient in the product
- Patients with severe coronary disease or cardiovascular disease including myocardial infarction, severe hypertension and ventricular arrythmia
- Repeated administration is contraindicated in patients with anemia, cardiac, pulmonary, renal, or hepatic disease

WARNINGS AND PRECAUTIONS

Risk in Patients with Concomitant Diseases/Conditions

- Use with caution in patients with high blood pressure, toxic goiter, benign prostatic hypertrophy, heart rate irregularity, glaucoma, and in those taking antidepressants.
- Patients with heart disease and uncontrolled/untreated high blood pressure should consult a doctor prior to taking phenylpropanolamine HCl.

Hepatotoxicity

This product contains dextromethorphan HBr, phenylpropanolamine HCl and paracetamol. Paracetamol has been associated with cases of acute liver failure, at times resulting in liver transplant and death. Most of the cases of liver injury are associated with the use of paracetamol at doses that exceed 4,000 mg (4 g) per day, and often involve more than one paracetamol-containing product.

Liver Warning

This product contains paracetamol. Severe liver damage may occur if:

- A child takes more than 5 doses in 24 hours, which is the maximum daily amount;
- An adult or child above 12 years old takes more than 4 g of paracetamol in 24 hours;
- Taken with other medicines containing paracetamol (or acetaminophen);
- An adult has 3 or more alcoholic drinks everyday while using this product.

Serious Skin Reactions

Rarely, paracetamol may cause serious skin reactions such as acute generalized exanthematous pustulosis, Stevens-Johnson syndrome, and toxic epidermal necrolysis, which can be fatal. Patients should be informed about the signs of serious skin reactions, and use of the drug should be discontinued at the first appearance of skin rash or any other sign of hypersensitivity.

General

- Do not use with any other medicine containing dextromethorphan, phenylpropanolamine or paracetamol (prescription or nonprescription).
- Do not take this medicine if you are at risk of developing respiratory failure (e.g., those with chronic bronchitis, emphysema or during an asthma attack).
- Do not take this medicine if you have persistent or chronic cough (i.e., cough lasting for more than 3 weeks) or when coughing is accompanied by excessive secretions unless directed by a physician.
- A persistent cough may be a sign of a serious condition. If cough persists for more than one week, tends to recur, or is accompanied by fever, rash, or persistent headache, consult a physician.
- This medicine should be given with care to patients with diabetes, kidney or liver disease including patients taking other drugs that affect the liver.
- Do not exceed recommended dose. In case of accidental overdose, contact a physician or poison control center immediately. Prompt medical attention is critical for adults as well as for children even if you do not notice any signs or symptoms.
- Discontinue use and consult a physician if symptoms do not improve or new symptoms appear.

Effects on Ability to Drive and Use Machine

This medicine may cause drowsiness and dizziness. Patients should observe caution while driving or performing other tasks requiring alertness.

INTERACTIONS WITH OTHER MEDICAMENTS

Dextromethorphan HBr

Patients on monoamine oxidase (MAO) inhibitors should not use products containing dextromethorphan without the supervision of a physician. The combination of MAO inhibitors and dextromethorphan may cause serotonergic syndrome (e.g., increased blood pressure, hyperpyrexia, arrhythmias, and myoclonus).

Dextromethorphan is primarily metabolized by the cytochrome P450 isoenzyme CYP2D6. There is a possibility of interaction with inhibitors of this enzyme, including amiodarone, haloperidol, propafenone, quinidine, selective serotonin reuptake inhibitors (SSRIs), and thioridazine. Symptoms of dextromethorphan toxicity have been reported when used together with amiodarone and quinidine.

Additive central nervous system (CNS) depression may occur when dextromethorphan is taken together with alcohol, antihistamines, psychotropics and other CNS depressants.

Phenylpropanolamine HCl

Phenylpropanolamine should not be administered concomitantly with other sympathomimetic agents (e.g., β2-agonists) because of the possibility of additive effects and increased toxicity that can potentiate the drug's hypertensive effects.

MAO inhibitors potentiate the pressor effect of indirectly acting sympathomimetic drugs such as phenylpropanolamine. Therefore, oral phenylpropanolamine should not be administered to patients who are receiving, or who have received within the prior 2-week period, a MAO inhibitor.

Although there is only a slight possibility of hypertension resulting from concomitant administration of phenylpropanolamine with rauwolfia alkaloids, tricyclic antidepressants or ganglionic blocking agents, patients receiving these drugs concomitantly should be observed closely.

Concomitant use of phenylpropanolamine and indomethacin was associated with severe hypertension in one patient. The mechanism is still unknown but it has been suggested that inhibition of prostaglandin synthesis by nonsteroidal anti-inflammatory agents (NSAID) may reduce a prostaglandin-mediated negative-feedback mechanism that controls the release of norepinephrine from sympathetic nerve endings. Additional studies are needed to determine the safety of combined use of a NSAID and phenylpropanolamine.

Administration of phenylpropanolamine to patients who have received cyclopropane or halogenated hydrocarbon general anesthetics may result in arrhythmias.

The effects of phenylpropanolamine and caffeine are mediated through activation of the central and sympathetic nervous systems. Severe, life threatening, and occasionally fatal hypertensive reactions have been reported after their combined use.

Paracetamol

Coadministration with warfarin or coumarin has been reported to potentiate the anticoagulation effect of these drugs and increase the risk of bleeding. Monitor prothrombin time (PT) and international normalized ratio (INR).

Concomitant use with and phenothiazine may increase the risk of severe hypothermia.

Concomitant administration with isoniazid may result in an increased risk of hepatotoxicity.

Anticonvulsants (e.g., phenytoin, barbiturates, carbamazepine) that induce hepatic microsomal enzymes may increase paracetamol-induced liver toxicity because of increased conversion of the drug to hepatic metabolites.

The absorption of paracetamol may be accelerated by metoclopramide or domperidone and reduced by cholestyramine.

STATEMENT ON USAGE FOR HIGH RISK GROUPS

Pregnancy: There are no adequate and well-controlled studies using dextromethorphan and phenylpropanolamine in pregnancy. Paracetamol crosses the placenta but the drug has been used widely as an analgesic in pregnancy and no adverse fetal effects have been recorded. However, as with any drug, consult a physician before using this product in pregnant women.

Lactation: It is not known if dextromethorphan and phenylpropanolamine are excreted in human milk. Paracetamol appears in breast milk but has not been detected in the urine of breastfed infants. Therefore, do not administer to breastfeeding women unless, in the opinion of a physician, the potential benefits of the drug justify the possible risk to the baby.

UNDESIRABLE EFFECTS

Dextromethorphan HBr

Adverse effects with dextromethorphan are rare and include nausea, vomiting, stomach discomfort, constipation, dizziness, drowsiness, excitation, and mental confusion. Hypersensitivity reactions have also been reported.

Phenylpropanolamine HCl

Adverse effects with phenylpropanolamine are related to its CNS and cardiovascular stimulant actions. The CNS stimulant effects may result in nervousness, restlessness, irritability, aggressiveness, insomnia, dizziness, headache, and tremor. Nausea and palpitations may also occur. The cardiovascular stimulant effects include increases in blood pressure which are usually proportionate to dosage, and chest tightness. Ventricular or atrial premature contractions and paroxysms of ventricular and atrial tachycardia have occurred with usual therapeutic doses; these effects probably represent idiosyncratic reactions to the drug.

Severe reactions with phenylpropanolamine include hypertensive crisis with hypertensive encephalopathy, seizures, arrhythmias, psychosis, and acute tubular necrosis. Cardiopulmonary arrest, intracranial hemorrhage, and death have also been reported.

When phenylpropanolamine is used as a nasal decongestant, rebound congestion and tachyphylaxis can occur within a few days.

Paracetamol

Paracetamol has low incidence of side effects when used within therapeutic doses. Minor gastrointestinal disturbances have been reported. Dermatologic reactions like pruritic maculopapular rash and urticaria have been reported. Other sensitivity reactions including laryngeal edema, angioedema and anaphylactoid reactions may occur rarely.

Hepatotoxicity can occur after ingestion of a single toxic dose or multiple excessive doses of paracetamol. Substantial elevations in alanine aminotransferase (ALT) occurred after receiving paracetamol in a dosage of 4g daily for two weeks.

Paracetamol very rarely aggravates bronchospasm in patients who are sensitive to aspirin and other non-steroidal anti-inflammatory drugs. Although paracetamol does not normally produce methemoglobinemia or hemolysis even after overdosage or in patients with glucose-6-phosphate dehydrogenase deficiency, there have been isolated reports of these complications.

Prolonged administration of large doses of paracetamol may lead to thrombocytopenia, leukopenia, agranulocytosis, and pancytopenia. Physical dependence does not develop even with prolonged use.

Paracetamol may cause serious skin reactions such as acute generalized exanthematous pustulosis, Stevens-Johnson syndrome, and toxic epidermal necrolysis rarely, which can be fatal.

OVERDOSE AND TREATMENT

Dextromethorphan HBr

The presentation of dextromethorphan intoxication depends on the ingested dose. Manifestations of minimal intoxication include tachycardia, hypertension, vomiting, mydriasis, diaphoresis, nystagmus, euphoria, loss of motor coordination, and giggling/laughing. Manifestations of moderate intoxication include those associated with minimal intoxication, hallucinations, and a plodding ataxic gait (zombie-like walking). Severely intoxicated individuals may be agitated or somnolent.

Treatment of dextromethorphan overdose includes symptomatic and supportive measures. Manifestations of toxicity may be resolved after intravenous administration of naloxone and oral administration of activated charcoal.

Phenylpropanolamine HCl

Hypertension is common after phenylpropanolamine overdose and some patients may present with confusion and altered mental status due to hypertensive encephalopathy. Several reports have linked the abuse of phenylpropanolamine with myocardial injury, especially when overdose is involved. Excessive doses of phenylpropanolamine may produce tachycardia, pupillary dilation, excitation, and arrhythmias. Cases of heart attack, stroke, intracranial bleeding, parenchymal cerebral hemorrhage, seizures, and death possibly associated with phenylpropanolamine have been reported.

Hypertensive episodes should respond promptly to intravenous α-adrenergic blockade with phentolamine. If tachycardia is a problem, a β-blocking drug could be used once α-blockade has been established. Alternatively, the primary treatment could be labetalol which has both α- and β-adrenergic antagonist properties. Full cardiovascular and blood pressure monitoring is essential.

Paracetamol

Overdosage of paracetamol usually involves 4 phases with the following signs and symptoms:

I. Anorexia, nausea, vomiting, malaise, and diaphoresis;

II. Right upper abdominal pain or tenderness, liver enlargement which may be characterized by abdominal discomfort of "feeling full", elevated bilirubin and liver enzyme concentrations, prolongation of prothrombin time, and occasionally oliguria;

III. Anorexia, nausea, vomiting, and malaise recur and signs of liver failure (e.g., jaundice) and possibly kidney failure and cardiomyopathy may develop;

IV. Recovery or progression to fatal complete liver failure

Immediate medical management is required in the event of an overdose, even if the patient is asymptomatic. Patients should be admitted to hospital for full supportive measures to be instituted. Activated charcoal may be used to reduce gastrointestinal absorption and should be administered within 1 hour of paracetamol ingestion. Plasma or serum paracetamol assay should be obtained as soon as possible, but no sooner than 4 hours following oral ingestion. As a guide to treatment of acute ingestion, the acetaminophen level can be plotted against time since oral ingestion on a nomogram (Rumack-Matthew). A level ≤ 150 mcg/mL and absence of toxic symptoms indicate that hepatotoxicity is very unlikely. Higher levels indicate possible hepatotoxicity. For acute poisoning, oral or intravenous acetylcysteine is given if hepatotoxicity is likely based on paracetamol dose or serum level. Acetylcysteine is most effective if given within 8 hours of paracetamol ingestion. If degree of toxicity is uncertain, acetylcysteine should be given until toxicity is ruled out. Liver function tests should be obtained initially and repeated at 24-hour intervals.

STORAGE CONDITIONS

• Keep the product out of reach and sight of children. • Store at temperatures not exceeding 30°C.

For Suspension:

ALWAYS KEEP CONTAINER TIGHTLY CLOSED. SHAKE WELL BEFORE USING.

AVAILABILITY: DECOLSIN CAPSULE - Box of 100s (in flex foil). DECOLSIN SUSPENSION - Bottles of 60 mL.

CAUTION: Foods, Drugs, Devices, and Cosmetics Act prohibits dispensing without prescription.

ADVERSE DRUG REACTION REPORTING STATEMENT

For suspected adverse drug reaction, seek medical attention immediately and report to the FDA at www.fda.gov.ph **AND** Unilab at (+632) 858-1000 or productsafety@unilab.com.ph. By reporting undesirable effects, you can help provide more information on the safety of this medicine.

Manufactured by AMHERST LABORATORIES, INC., UNILAB Pharma Campus, Barangay Mamplasan Biñan, Laguna, Philippines for **UNILAB, Inc.,** No. 66 United Street, Mandaluyong City, Metro Manila, Philippines

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