ZUGOKOFF COUGH EXPECTORANT

SUMMARY OF PRODUCT CHARACTERISTICS (SmPC)

1. NAME OF MEDICINAL PRODUCT

ZUGOKOFF COUGH EXPECTORANT

2. QUALITATIVE AND QUANTITATIVE COMPOSITION OF THE ACTIVE INGREDIENT

Each 5ml contains:

Diphenhydramine Hydrochloride:	14mg
Ammonium Chloride:	135mg
Sodium Citrate:	57mg
Menthol Crystals	1.1mg

For excipients see 6.1

3. PHARMACEUTICAL FORM

Liquid Expectorant

Dark brown viscous liquid syrup presented in 100ml pet bottle with customized (ZUGOMED) ROPP screw cap packed in an outer secondary pack, shrink-wrapped and shipped in a tertiary carton.

4. CLINICAL PARTICULARS

4.1 Therapeutic Indications

ZUGOKOFF EXPECTORANT is a suitable preparation for the relief of dry cough and cold. It makes the cough more productive by loosening tenacious bronchial mucous. It

combats the congestive symptom such as nasal congestion, blocked sinuses, runny nose and catarrh that usually accompany cough and cold ZUGOKOF EXPECTORANT is also useful for the treatment of hay fever and other allergic conditions affecting the upper respiratory tract.

4.2 Posology and Method of Administration

Adults: 10ml three times daily.

Children: 6 – 12 years: 5ml 3 times

2 – 5 years: 2.5ml 3 times daily

4.3 Contraindications

Zugokoff (Expectorant) is contraindicated in individuals with known hypersensitivity to Diphenhydramine or menthol or to any of the excipients.

4.4 Special Warnings and Precautions for Use

This product may cause drowsiness. If affected, individuals should not drive or operate machinery.

Diphenhydramine may enhance the sedative effects of central nervous system depressants including alcohol, sedatives, opioid analgesics, antipsychotics and tranquilizers.

Alcoholic beverages should be avoided while taking this medicine.

Do not use with any other product containing diphenhydramine, including topical formulations used on large areas of skin.

4.5 Interaction with other Medicinal Products and other forms of Interaction

Diphenhydramine: CNS depressants: may enhance the sedative effects of CNS depressants including barbiturates, hypnotics, opioid analgesics, anxiolytic sedatives, antipsychotics and alcohol.

Antimuscarinic drugs: may have an additive muscarinic action with other drugs, such as atropine and some antidepressants

MAOIs: Not be used in patients taking MAOIs or within 14 days of stopping treatment as there is a risk of serotonin syndrome.

Menthol: There are no known drug interactions associated with menthol.

4.6 **Pregnancy and Lactation**

This product should not be used during pregnancy or breastfeeding unless the potential benefit of treatment to the mother outweighs the possible risks to the developing fetus or breastfeeding infant.

Diphenhydramine use in Pregnancy: Diphenhydramine has been in widespread use for many years without any apparent ill consequence. Diphenhydramine is known to cross the placenta and, therefore, should only be used during pregnancy if considered essential by a doctor. Breastfeeding Diphenhydramine is excreted into human breast milk, but levels have not been reported. Although the levels are not thought to be sufficiently high enough after therapeutic doses to affect the infant, the use of diphenhydramine during breast-feeding is not recommended.

Menthol: There are no adequate and well-controlled studies in pregnant women for menthol. Menthol is excreted in breast milk; when 100 mg of menthol was ingested, there was up to 5.87 ug/L of menthol in breast milk.

4.7 **Effect on ability to Drive and use Machine**

This product may cause drowsiness. If affected, the patient should not drive or operate machinery.

4.8 **Undesirable Effects**

- Flushing
- Tachycardia ·
- Blurred vision ·

- Delirium ·
- Toxic psychosis ·
- Urinary retention ·
- Respiratory depression ·
- Urticaria.

4.9 **Overdose**

Symptoms and signs

Diphenhydramine

Mild to Moderate Symptoms: Drowsiness, anticholinergic syndrome (mydriasis, flushing, fever, dry mouth, urinary retention, decreased bowel sounds), tachycardia, mild hypertension, nausea and vomiting are common after overdose. Agitation, confusion and hallucinations may develop after moderate poisoning.

Severe Symptoms: Effects may include delirium, psychosis, seizures, coma, hypotension, QRS widening, and ventricular dysrhythmias (including torsades de pointes), but are generally only reported in adults after large ingestions. Rhabdomyolysis and renal failure may rarely develop in patients with prolonged agitation, coma or seizure. Death may occur as a result of respiratory failure or circulatory collapse.
In children, CNS excitation, including hallucinations and convulsions may appear; with larger doses, coma or cardiovascular collapse may follow.

Menthol

Excessive use of menthol may lead to abdominal pain, vomiting, flushed face, dizziness, weakness, tachycardia, stupor, and ataxia.

Treatment

Treatment of overdose should be symptomatic and supportive. The benefit of gastric decontamination is uncertain. Consider activated charcoal (charcoal dose: 50 g for adults; 1 g/kg for children) only if the patient presents within 1 hour of ingestion of a potentially toxic amount Seizures may be controlled with Diazepam or Thiopental Sodium. The intravenous use of Physostigmine may be efficacious in antagonizing severe anticholinergic symptoms.

5.0 PHARMACOLOGICAL PROPERTIES

5.1 **Pharmacodynamic Properties**

Diphenhydramine possesses antitussive, antihistaminic and anticholinergic properties. Experiments have shown that the antitussive effect (resulting from an action on the brainstem) is discrete from its antihistaminic effect. The duration of activity of diphenhydramine is between 4 and 8 hours.

Menthol has mild local anesthetic and decongestant properties.

5.**2 Pharmacokinetic Properties**

Absorption

Diphenhydramine and menthol are well absorbed from the gut following oral administration. Peak serum levels of diphenhydramine following a 50 mg oral dose are reached at between 2 and 2.5 hours.

Distribution

Diphenhydramine is widely distributed throughout the body, including the CNS. Following a 50 mg oral dose of diphenhydramine, the volume of distribution is in the

range 3.3 - 6.8 l/kg, and it is some 78% bound to plasma proteins.

Metabolism and Elimination

Diphenhydramine undergoes extensive first pass metabolism. Two successive N demethylations occur, with the resultant amine being oxidised to a carboxylic acid. Values for plasma clearance of a 50 mg oral dose of diphenhydramine lie in the range 6001300 ml/min and the terminal elimination half-life lies in the range 3.4 - 9.3 hours. Little unchanged drug is excreted in the urine. Menthol is hydroxylated in the liver by microsomal enzymes to p-methane-3,8 diol. This is then conjugated with glucuronide and excreted both in urine and bile as the Glucuronide.

The Elderly

Pharmacokinetic studies indicate no major differences in distribution or elimination of Diphenhydramine compared to younger adults.

Renal Dysfunction

The results of a review on the use of Diphenhydramine in renal failure suggest that in moderate to severe renal failure, the dose interval should be extended by a period dependent on Glomerular filtration rate (GFR).

5.3 Preclinical Safety Data

Mutagenicity

The results of a range of tests suggest that neither diphenhydramine nor menthol have mutagenic potential.

Carcinogenicity

There is insufficient information to determine the carcinogenic potential of diphenhydramine or menthol, although such effects have not been associated with these drugs in animal studies.

Teratogenicity

The results of a number of studies suggest that the administration of either diphenhydramine or menthol does not produce any statistically significant teratogenic effects in rats, rabbits and mice.

Fertility

There is insufficient information to determine whether diphenhydramine has the potential to impair fertility, although a diminished fertility rate has been observed in mice in one study.

6.0 PHARMACEUTICAL PARTICULARS

6.1 List of Excipients

- Glycerin
- Sugar
- Methylparaben
- Propylparaben
- Xanthan Gum
- Raspberry Flavor
- Caramel
- Citric acid

6.2 Incompatibilities

None.

6.3 **Shelf Life**

3years (36months)

6.**4 Special Precaution for Storage**

Store in a cool dry place below 30^0C

6.5 Nature and Content of Container and Special equipment for use, Administration or Implantation

Primary pack: 100ml amber colored PET bottle with a customized 'VISKO' ROPP cap

Equipment for administration: Transparent 10ml measuring cup

Secondary pack: customized outer pack

Shipping cartons.

6.6 **Special Precaution for Disposal and other Handling**

None.

7.0 APPLICANT/ MANUFACTURER

Manufactured in Nigeria by
Jehyson Healthcare Limited
Jehyson Crescent
78 Lagos Expressway,
Apomu town Arigbajo
Ewekoro L.G.A, Ogun State

Marketed by
ZUGOMED PHARMACEUTICALS LIMITED