AUSTRALIAN PRODUCT INFORMATION – GENOPTIC® (GENTAMICIN SULFATE) EYE DROPS

1 NAME OF THE MEDICINE

Gentamicin sulfate.

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each mL of GENOTIC® eye drops contains gentamicin sulfate (equivalent to 3 mg gentamicin).

For the full list of excipients, see Section 6.1 List of excipients.

3 PHARMACEUTICAL FORM

Eye drops, solution.

GENOPTIC® eye drops are a sterile, aqueous solution buffered to approximately pH 7.0 for use in the eye.

4 CLINICAL PARTICULARS

4.1 THERAPEUTIC INDICATIONS

GENOPTIC® eye drops are indicated in the topical treatment of infections of the external eye and its adnexa caused by susceptible bacteria. Such infections include conjunctivitis, keratitis, keratoconjunctivitis, corneal ulcers, blepharitis, blepharoconjunctivitis, acute meibomianitis and dacryocystitis.

4.2 DOSE AND METHOD OF ADMINISTRATION

Instil one or two drops of GENOPTIC® eye drops into the affected eye(s) every four hours. In severe infections, dosage may be increased to a maximum of 2 drops once every hour.

In order to minimise systemic absorption of GENOPTIC® eye drops, apply pressure to the tear duct immediately following administration of the drug.

4.3 CONTRAINDICATIONS

Hypersensitivity to gentamicin sulfate, benzalkonium chloride or any of the other constituents.

4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE

Identified Precautions

GENOPTIC® eye drops are not for injection. It should never be injected subconjunctivally, nor should it be introduced directly into the anterior chamber of the eye.

Prolonged use of topical antibiotics may give rise to overgrowth of nonsusceptible organisms, such as fungi. Bacterial resistance to gentamicin may also develop. Should this occur, or if irritation or hypersensitivity to any component of the product develops, or purulent discharge, inflammation or pain becomes aggravated, discontinue use of the preparation and institute appropriate therapy.

Patients should be advised not to wear contact lenses if they have signs and symptoms of bacterial ocular infection. Patients wearing soft (hydrophilic) contact lenses should be instructed to remove contact lenses before administration of the drug and wait 10-15 minutes after instilling GENOPTIC® eye drops before reinserting soft contact lenses. Patients should be advised that the preservative in GENOPTIC® eye drops, benzalkonium chloride, may be absorbed by soft contact lenses.

To prevent eye injury or contaminating the dropper tip and solution, patients should be advised not touch the eyelids, the surrounding area or any surface with the dropper tip of the bottle.

Use in the elderly

Safety and effectiveness of GENOPTIC® eye drops in elderly patients have not been established.

Paediatric use

Safety and effectiveness of GENOPTIC® eye drops in paediatric patients have not been established.

Effects on laboratory tests

No data available.

4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS

No data available

4.6 FERTILITY, PREGNANCY AND LACTATION

Effects on fertility

No data available.

Use in pregnancy – Pregnancy Category D

Gentamicin and other aminoglycosides cross the placenta. There is evidence of selective uptake of gentamicin by the foetal kidney resulting in damage (probably reversible) to immature nephrons. Eighth cranial nerve damage has also been reported following *in-utero* exposure to some of the aminoglycosides. Because of their chemical similarity, all aminoglycosides must be considered potentially nephrotoxic and ototoxic to the foetus. It should also be noted that therapeutic blood levels in the mother do not equate with safety for the foetus.

There are no adequate and well-controlled studies of GENOPTIC® eye drops in pregnant women. Gentamicin should be used during pregnancy only if the potential benefit justifies the potential risk to the foetus.

Use in lactation

Studies on the use of GENOPTIC® eye drops during lactation have not been conducted. Because many drugs are excreted in human milk, caution should be exercised when GENOPTIC® eye drops is administered to a nursing woman.

4.7 EFFECTS ON ABILITY TO DRIVE AND USE MACHINES

The effects of this medicine on a person's ability to drive and use machines were not assessed as part of its registration.

4.8 ADVERSE EFFECTS (UNDESIRABLE EFFECTS)

Transient irritation has been reported with the use of GENOPTIC® eye drops.

Post-Marketing experience

The following adverse reactions have been identified during post-marketing use of GENOPTIC ® eye drops:

- Conjunctival hyperaemia
- Ocular hyperaemia
- Eye discharge
- Eye irritation
- Eye pain
- Eye oedema
- Hypersensitivity including eyelid irritation, eyelid oedema, eye swelling.

Reporting suspected adverse effects

Reporting suspected adverse reactions after registration of the medicinal product is important. It allows continued monitoring of the benefit-risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions at www.tga.gov.au/reporting-problems.

4.9 OVERDOSE

In case of overdosage, immediately flush the eye(s) with water or normal saline.

If ingested accidently, patients should be advised to drink plenty of liquid to dilute and seek medical direction.

For information on the management of overdose, contact the Poisons Information Centre on 13 11 26 (Australia).

5 PHARMACOLOGICAL PROPERTIES

5.1 PHARMACODYNAMIC PROPERTIES

Mechanism of action

Gentamicin sulfate is a water soluble antibiotic of the aminoglycoside group which has shown activity against a wide variety of pathogenic gram-negative and gram-positive bacteria. The gram-positive bacteria against which gentamicin sulfate is active include coagulase positive and negative staphylococci.

The gram-negative bacteria against which gentamicin sulfate is active include certain strains of *Pseudomonas aeruginosa*, indole positive and indole negative Proteus species, *Escherichia coli, Klebsiella pneumoniae*, (Friedlander's bacillus), *Haemophilus influenzae and Haemophilus aegyptius* (Koch-Weeks bacillus), *Aerobacter aerogenes, Moraxella lacunata* (diplobacillus of Morax-Axenfeld), and Neisseria species, including *Neisseria gonorrhoeae.*

At this time there are increasing members of resistant cases being reported for the aminoglycoside class of antibiotics, particularly to Streptococcus pneumoniae. This phenomenon will also reduce the synergy with the β-lactam class of drugs as combination therapy. This should be considered when commencing therapy for all ocular infections and the results of therapy should be closely monitored for signs of inefficiency. Should this occur, more aggressive pharmacotherapeutic options, e.g. a cephalosporin, should be used.

Clinical trials

No data available.

5.2 PHARMACOKINETIC PROPERTIES

Studies on the pharmacokinetics of ophthalmic preparations of gentamicin sulfate have not been conducted.

5.3 PRECLINICAL SAFETY DATA

Genotoxicity

No data available.

Carcinogenicity

No data available.

6 PHARMACEUTICAL PARTICULARS

6.1 LIST OF EXCIPIENTS

Each mL contains gentamicin sulfate (equivalent to 3 mg gentamicin) with polyvinyl alcohol (LIQUIFILM®), disodium edetate, sodium phosphate dibasic, sodium chloride, benzalkonium chloride as a preservative and purified water.

6.2 INCOMPATIBILITIES

Incompatibilities were either not assessed or not identified as part of the registration of this medicine.

6.3 SHELF LIFE

2 years.

6.4 SPECIAL PRECAUTIONS FOR STORAGE

Store below 25°C.
To avoid contamination of the solution, keep container tightly closed.
Do not touch dropper tip to any surface.
Discard unused contents 4 weeks after opening the bottle.
Contents are sterile if seal is intact.

6.5 NATURE AND CONTENTS OF CONTAINER

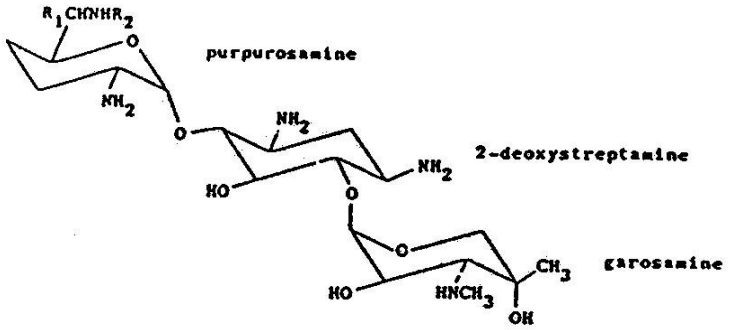
GENOPTIC® eye drops is stored in a 5mL dropper bottle. AUST R 23215

6.6 SPECIAL PRECAUTIONS FOR DISPOSAL

In Australia, any unused medicine or waste material should be disposed of by taking to your local pharmacy.

6.7 PHYSICOCHEMICAL PROPERTIES

Chemical structure



(Structure of gentamicin)

Gentamicin C_1: $R_1 = R_2 = CH_3$
Gentamicin C_{1A}: $R_1 = R_2 = H$
Gentamicin C_2: $R_1 = CH_3$ $R_2 = H$

Description

Gentamicin sulfate is a white to buff hygroscopic powder which is freely soluble in water, ethylene glycol and formamide. It is practically insoluble in alcohol, acetone, chloroform and ether. Gentamicin sulfate is a mixture of the sulfates of gentamicin C_1, gentamicin C_{1A} and gentamicin C_2. When dry, gentamicin sulfate contains not less than 590 units of gentamicin per mg.

Chemical Name: O-3-deoxy-4-C-methyl-3-(methylamino)-β-L-arabinopyranosyl-(1→6)-O-[2,6-diamino-2,3,4,6-tetradeoxy-α-D-erythro-hexopyranosyl-(1→4)]-2-deoxy-D-streptamine.

Empirical formula: Gentamicin C_1: $C_{21}H_{43}N_5O_7$
Gentamicin C_{1A}: $C_{19}H_{39}N_5O_7$
Gentamicin C_2: $C_{20}H_{41}N_5O_7$

CAS number: 1405-41-0

7 MEDICINE SCHEDULE (POISONS STANDARD)

S4 – Prescription Only Medicine

8 SPONSOR

Allergan Australia Pty. Ltd.
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9 DATE OF FIRST APPROVAL

14 October 1991

10 DATE OF REVISION

13 January 2021

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SUMMARY TABLE OF CHANGES

Section Changed	Summary of new information
All	The PI has been reformatted in line with the TGA's approved form for PIs.