NEW ZEALAND DATA SHEET

BACTROBAN®
*Mupirocin 2%*

Presentation

BACTROBAN Ointment 2% contains 20mg mupirocin per gram in a bland water soluble ointment base consisting of polyethylene glycol 400 and polyethylene glycol 3350 (polyethylene glycol ointment NF).

Indications

BACTROBAN Ointment is indicated for the topical treatment of the following primary and secondary skin infections due to susceptible pathogens: primary pyodermas such as impetigo, folliculitis, furunculosis, ecthyma; secondary infected dermatoses such as eczema, psoriasis, atopic dermatitis, herpes, epidermolysis bullosa, ichtyosis, and infected traumatic lesions such as ulcers, minor burns, cuts, abrasions, lacerations, wounds, biopsy sites, surgical incisions and insect bites.

Prophylactically, BACTROBAN Ointment may be used to prevent bacterial contamination in minor burns, biopsy sites, incisions and other clean lesions. For abrasions, minor cuts and wounds the prophylactic use of BACTROBAN may prevent the development of infection and permit wound healing.

Dosage and Administration

A small amount of BACTROBAN Ointment should be applied to the affected area three times daily for up to 10 days, depending on the response. The area treated may be covered with a gauze dressing if required.

Any product remaining at the end of treatment should be discarded.

Do not mix with other preparations as there is a risk of dilution, resulting in a reduction in the antibacterial activity and potential loss of stability of the mupirocin in the ointment.

*Patients with Renal Impairment*

See *Warnings and Precautions*.

Contraindications

BACTROBAN ointment should not be given to patients with a history of hypersensitivity to mupirocin or any of the constituents of the preparation.
Warnings and Precautions

In the rare event of a possible sensitisation reaction or severe local irritation occurring with the use of the product, treatment should be discontinued, the product should be wiped off and appropriate alternative therapy for the infection instituted.

As with other antibacterial products, prolonged use may result in overgrowth of non-susceptible organisms.

Pseudomembranous colitis has been reported with the use of antibiotics and may range in severity from mild to life-threatening. Therefore, it is important to consider its diagnosis in patients who develop diarrhoea during or after antibiotic use. Although this is less likely to occur with topically applied mupirocin, if prolonged or significant diarrhoea occurs or the patient experiences abdominal cramps, treatment should be discontinued immediately and the patient investigated further.

Polyethylene glycol can be absorbed from open wounds and damaged skin and is excreted by the kidneys. In common with other polyethylene glycol based ointments, mupirocin ointment should not be used in conditions where absorption of large quantities of polyethylene glycol is possible, especially if there is evidence of moderate or severe renal impairment.

This mupirocin ointment formulation is not suitable for:

- ophthalmic use,
- intranasal use,
- use in conjunction with cannulae and
- at the site of central venous cannulation

Avoid contact with eyes. If contaminated, the eyes should be thoroughly irrigated with water until the ointment residues have been removed.

Fertility

There are no data on the effects of mupirocin on human fertility. Studies in rats showed no effects on fertility (see Preclinical Safety Data).

Use in Pregnancy

Adequate human data on use during pregnancy are not available. Studies in animals do not indicate reproductive toxicity (see Preclinical Safety Data).

Use in Lactation

Adequate human and animal data on use during lactation are not available.
If a cracked nipple is to be treated, it should be thoroughly washed prior to breastfeeding.

**Effect on Ability to Drive and Use Machines**

No adverse effects on the ability to drive or operate machinery have been observed.

**Other**

**Preclinical safety data**

**Carcinogenesis/Mutagenesis**

**Carcinogenesis**

Carcinogenicity studies with mupirocin have not been conducted.

**Genotoxicity**

Mupirocin was not mutagenic in Salmonella typhimurium or Escherichia coli (Ames assay). In a Yahagi assay, small increases in Salmonella typhimurium TA98 were observed at highly cytotoxic concentrations. In an in vitro mammalian gene mutation assay (MLA), no increase in mutation frequency was observed in the absence of metabolic activation. In the presence of metabolic activation, small increases in mutation frequency were observed at highly cytotoxic concentrations. However, no effects were observed in, yeast cell assays for gene conversion/mutation, an in vitro human lymphocyte assay or in an in vitro unscheduled DNA synthesis (UDS) assay. Furthermore, an in vivo mouse micronucleus assay (chromosome damage) and a rat Comet assay (DNA strand breakage) were negative, indicating the small increases observed at highly cytotoxic concentrations in vitro do not translate to the in vivo situation.

**Reproductive Toxicology**

**Fertility**

Mupirocin administered subcutaneously to male rats 10 weeks prior to mating and to female rats 15 days prior to mating until 20 days post coitum at doses up to 100 mg/kg/day had no effect on fertility.

**Pregnancy**

In embryo-foetal development studies in rats there was no evidence of developmental toxicity at subcutaneous doses up to 375 mg/kg/day. In an embryo-foetal development study in rabbits at subcutaneous doses up to 160 mg/kg/day, maternal toxicity (impaired weight gain and severe injection site irritation) at the high dose resulted in abortion or poor litter performance. However, there was no evidence of developmental toxicity in foetuses of rabbits maintaining pregnancy to term.

**Adverse Effects**

Adverse reactions are listed below by system organ class and frequency. Frequencies are defined as: very common (≥1/10), common (≥1/100, <1/10), uncommon (≥1/1000, <1/100), rare (≥1/10,000, <1/1000), very rare (<1/10,000), including isolated reports.
Common and uncommon adverse reactions were determined from pooled safety data from a clinical trial population of 1573 treated patients encompassing 12 clinical studies. Very rare adverse reactions were primarily determined from post-marketing experience data and therefore refer to reporting rate rather than true frequency.

**Immune system disorders:**

Very rare: Systemic allergic reactions including anaphylaxis, generalised rash, urticaria and angioedema have been reported with BACTROBAN ointment.

**Skin and subcutaneous tissue disorders:**

Common: Burning localised to the area of application.

Uncommon: Itching, erythema, stinging and dryness localised to the area of application. Cutaneous sensitisation reactions to mupirocin or the ointment base.

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**Interactions**

No drug interactions have been reported.

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**Overdose**

There is currently limited experience with overdosage of BACTROBAN.

There is no specific treatment for an overdose of BACTROBAN. In the event of overdose, the patient should be treated supportively with appropriate monitoring as necessary. Further management should be as clinically indicated or as recommended by the national poisons centre, where available.

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**Further Information**

**Actions**

**Mechanism of action**

Mupirocin is a novel antibiotic produced through fermentation of *Pseudomonas fluorescens*. Mupirocin inhibits isoleucyl transfer-RNA synthetase, thereby arresting bacterial protein synthesis. Due to this particular mode of action and its unique chemical structure, mupirocin does not show any cross-resistance with other clinically available antibiotics.

Mupirocin has bacteriostatic properties at minimum inhibitory concentrations and bactericidal properties at the higher concentrations reached when applied locally.

Following intravenous or oral administration, mupirocin is rapidly metabolised to the inactive monic acid.
Pharmacodynamic Effects

Activity:
Mupirocin is a topical antibacterial agent showing in vivo activity against Staphylococcus aureus (including methicillin-resistant strains), S. epidermidis and beta-haemolytic Streptococcus species. The in vitro spectrum of activity includes the following bacteria:

Commonly Susceptibility Species:
Susceptible:
- Staphylococcus aureus\(^1,2\)
- Staphylococcus epidermidis\(^1,2\)
- Coagulase-negative staphylococci\(^1,2\)
- Streptococcus species\(^*\)
- Haemophilus influenzae
- Neisseria gonorrhoeae
- Neisseria meningitidis
- Moraxella catarrhalis
- Pasteurella multocida

\(^1\) Clinical efficacy has been demonstrated for susceptible isolates in approved clinical indications.

\(^2\) Including beta-lactamase producing strains and methicillin-resistant strains

Resistant Species
- Corynebacterium species
- Enterobacteriaceae
- Gram negative non-fermenting rods
- Micrococcus species
- Anaerobes

Mupirocin susceptibility (MIC) breakpoints for Staphylococcus spp.

Susceptible: less than or equal to 1 microgram/ml
Intermediate: 2 to 256 micrograms/ml
Resistant: greater than 256 micrograms/ml

Cross-resistance:
Mupirocin does not demonstrate cross-resistance with any other known antimicrobial.
Resistance mechanisms:
Low-level resistance in staphylococci (MICs 8-256 mcg/ml) has been shown to be due to changes in the native isoleucyl tRNA synthetase enzyme. High-level resistance in staphylococci (MICs ≥ 512 mcg/ml) has been shown to be due to a distinct, plasmid encoded isoleucyl tRNA synthetase enzyme. Intrinsic resistance in Gram negative organisms such as the Enterobacteriaceae could be due to poor penetration into the bacterial cell.

Pharmacokinetics

Absorption
Mupirocin is poorly absorbed through intact human skin. However, if it is absorbed (e.g. through broken/diseased skin) or it is given systemically, it is metabolised to the microbiologically inactive metabolite monic acid and rapidly excreted.

Excretion
Mupirocin is rapidly eliminated from the body by metabolism to its inactive metabolite monic acid which is excreted mainly by the kidney (90%).

Special Patient populations

Elderly patients: No restrictions unless the condition being treated could lead to absorption of polyethylene glycol and there is evidence of moderate or severe renal impairment (see PRECAUTIONS).

Other

Excipients
Bactroban Ointment contains the excipients:

- macrogol 400
- macrogol 3350

Pharmaceutical Precautions

Instructions for Handling
Wash your hands after application.

Incompatibilities
None reported.

Shelf Life
Two years when stored below 25°C.

Special Precautions for Storage


BACTROBAN ointment may be stored at room temperature (below 25°C) up to the expiry date.

Package Quantities

BACTROBAN Ointment 2% is supplied in 15 g tubes.

Medicine Schedule

Prescription Medicine.

Sponsor Details

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