

New Zealand Data Sheet

1 MUPIDER® (2% Ointment)

MUPIDER 2% Ointment

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Mupider 2% Ointment contains 20 mg mupirocin per gram in polyethylene glycol base.

For the full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Mupider ointment is semi-transparent and water-soluble

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

Mupider 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, ichthyosis, and infected traumatic lesions such as ulcers, minor burns, cuts, abrasions, lacerations, wounds, biopsy sites, surgical incisions and insect bites.

Prophylactically, Mupider 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 Mupider may prevent the development of infection and permit wound healing.

4.2 Dose and method of administration

Dose

Adults (including elderly/hepatically impaired) and children

A small amount of Mupider 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.

Renal impairment

See section 4.4 Special warnings and precautions for use

4.3 Contraindications

Mupider ointment should not be given to patients with a history of hypersensitivity to mupirocin or any of the constituents of the preparation.

4.4 Special warnings and precautions for use

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

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.

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

This mupirocin ointment formulation is not suitable for:

- ophthalmic use
- intranasal use (in neonates or infants)
- use in conjunction with cannulae
- 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.

Renal impairment

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.

4.5 Interaction with other medicines and other forms of interaction

No drug interactions have been reported.

4.6 Fertility, pregnancy and lactation

Pregnancy

Adequate human data on use during pregnancy are not available. Studies in animals do not indicate reproductive toxicity (see section 5.3 Preclinical safety data).

Breastfeeding

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.

Fertility

There are no data on the effects of mupirocin on human fertility. Studies in rats showed no effects on fertility (see section 5.3 Preclinical safety data).

4.7 Effects on ability to drive and use machines

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

4.8 Undesirable effects

Adverse reactions are listed below by system organ class and frequency.

Frequencies are defined as:

Very common ($\geq 1/10$); common ($\geq 1/100, < 1/10$); uncommon ($\geq 1/1,000, < 1/100$); rare ($\geq 1/10,000, < 1/1,000$); 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 1,573 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.

System organ class	Frequency	Adverse reactions
Immune system disorders	Very rare	Systemic allergic reactions including anaphylaxis, generalised rash, urticaria and angioedema
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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Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicine is important. It allows continued monitoring of the benefit/risk balance of the medicine. Healthcare professionals are asked to report any suspected adverse reactions

<https://nzphvc.otago.ac.nz/reporting/>

4.9 **Overdose**

There is currently limited experience with overdosage of mupirocin.

There is no specific treatment for an overdose of mupirocin. 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 applicable.

For advice on the management of overdose please contact the National Poisons Centre on 0800 POISON (0800 764766).

5 PHARMACOLOGICAL PROPERTIES

5.1 **Pharmacodynamic properties**

Pharmacotherapeutic group: Antibiotics and chemotherapeutics for dermatological use
 ATC code: D06AX09

Mechanism of action

Mupirocin is an 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 shows little risk of selection of resistant bacteria if used as prescribed.

Mupricin 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

Mupider ointment shows *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:

Aerobic Gram-positive

- *Staphylococcus aureus* (including beta-lactamase producing strains and methicillin resistant strains)
- *Staphylococcus epidermidis* (including beta-lactamase producing strains and methicillin resistant strains)
- Other coagulase negative *Staphylococci* (including methicillin resistant strains)
- *Streptococcus* species

Anaerobic Gram-negative

- *Haemophilus influenzae*
- *Neisseria gonorrhoeae*
- *Neisseria meningitidis*
- *Branhamella catarrhalis*
- *Pasteurella multocida*
- *Proteus mirabilis*
- *Proteus vulgaris*
- *Enterobacter cloacae*
- *Enterobacter aerogenes*
- *Citrobacter freundii*
- *Bordetella pertussis*

Susceptibility

Susceptible

- *Staphylococcus aureus**
- *Staphylococcus epidermidis**
- *Coagulase-negative staphylococci**
- *Staphylococcus species**
- *Haemophilus influenza*
- *Neisseria gonorrhoeae*
- *Neisseria meningitidis*
- *Moraxella catarrhalis*
- *Pasteurella multocida*

*Clinical efficacy has been demonstrated for susceptible isolates in approved clinical indications.

Insusceptible

- *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 to 256 mcg/mL) has been shown to be due to changes in the native isoleucyl tRNA synthetase enzyme. High-level resistance in staphylococci (MICs \geq 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.

5.2 Pharmacokinetic properties

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.

Elimination

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

5.3 Preclinical safety data

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.

Carcinogenesis

Carcinogenicity studies with mupirocin have not been conducted.

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.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Polyethylene glycol 400
Polyethylene glycol 3350.

6.2 Incompatibilities

None reported

6.3 Shelf life

24 months unopened.

6 months once tube is opened.

6.4 Special precautions for storage

Store below 25°C.

6.5 Nature and contents of container

Mupider 2% Ointment is supplied in 5 g and 15 g tubes.

6.6 Special precautions for disposal and other handling

Wash your hands after application.

7 MEDICINE SCHEDULE

Prescription Only Medicine

8 SPONSOR

BNM Group
39 Anzac Road
Browns Bay
Auckland 0753

Phone: 0800 437 849

9 DATE OF FIRST APPROVAL

Date of publication in the New Zealand Gazette of consent to distribute the medicine:
06 September 2012

10 DATE OF REVISION OF TEXT

10 February 2020

Summary table of changes:

Section changed	Summary of new information
4.8	Section tabulated to improve readability
5.1	Pharmacotherapeutic group updated
6.5	New pack size added
8	Sponsor name updated from ABM Pharma Limited to BNM Group