Drugfield **PHARMACEUTICALS LIMITED**

SUMMARY OF PRODUCT CHARACTERISTICS

Biocoten® Cream

1. NAME OF THE MEDICINAL PRODUCT

Biocoten® Cream

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each gram of the cream contains 0.4mg Dexamethasone as Dexamethasone Acetate, 1.0mg Gentamicin as Gentamicin Sulphate and 10.0mg Clotrimazole.

For a full list of excipients, see section 6.1

3. PHARMACEUTICAL FORM

Cream

4. Clinical particulars

4.1 Therapeutic indications

Inflammation and infection of the skin, particularly those caused by fungi and/or bacteria such as contact eczema, atopic eczema, seborrhoeal eczema, mycotic eczema, microbial eczema, nummular eczema, eczema in abnormal intestinal flora, intertrigo, non-specific puritus, circumscribed disseminated neurodermatitis, folliculitis, pyodermia, pustular dermatitis, infections secondary to accidental injuries or burns.

4.2 Posology and method of administration

Posology

A sufficient quantity of the cream is rubbed into the affected skin area after cleansing twice daily, preferably mornings and evenings.

The treatment should be continued for several days after disappearance of symptoms such as itching and burning in order to assue complete eradication of the infection.

Method of administration

Topical Application

4.3 Contraindications

Hypersensitivity to the active substance(s) or to any of the excipients

4.4 Special warnings and precautions for use

For external use only. Do not inject or swallow.

Since Biocoten Cream contains Dexamethasone, it should be used with caution in babies and pregnant women.

4.5 Interaction with other medicinal products and other forms of interaction

No interaction studies have been performed.

4.6 Pregnancy and Lactation

None teratogenic, Biocoten® Cream is meant for external application

4.7 Effects on ability to drive and use machines

Not Applicable

4.8 Overdose

Not Applicable. However, In the event of accidental oral ingestion, routine measures such as gastric lavage should be performed as soon as possible after ingestion.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamics properties

Pharmacotherapeutic group: Anti-inflammatory/Antibiotics/Antifungal

Gentamicin Sulphate is effective against a wide range of gram positive and gram negative organism but has no antifungal activity.

Dexamethasone has very high ghico-corticiod activity. It is particularly suitable for conditions where water retention would be a disadvantage.
Therapeutically, the mineralocortiooid actions are used in conditions such as Addison's disease and the glucocorticoid actions, which are related to the apparently inseparably anti-inflammatory, anti-allergic, and antirheumatic properties, in conditions such as asthma and rheumatoid arthritis. It appears that a measure of a corticosteroid's potency as a glucocorticoid is the degree of inhibition of corticotrophin secretion it produces.

Clotrimazole 1-(-Chloro-,-diphenylbenzyl) imidazole is a synthetic imidazole derivative with a broad band antimycotic action. In-vitro tests have shown, that a concentration of 2µg/ml or less is capable of impeding the growth of all important dermatophytides, yeasts and moulds. The spectrum of activity of Clotrimazole includes dermatophytides such as *Trichophyton interdigitale*, *Trichophyton mentagrophytes*, *Trichophyton rubrum, Trichophyton tonsurans, Trichophyton verrucosum Epiderorphyton floccosum*, *Microsporon audouinii* and *Microsporon canis*. Its strong action against yeasts such as *Candida albicans*, *Candida tropicalis*, *Candida pseudotropicalis*, *Candida krusei*, *Candida parapsilosis*, Torulopsis species, Rhodotorula species and Trichosporon Species is clinically very important.

Individual tests show that a concentration of less than 2µg/ml is enough to impede growth and a concentration of 5µg/ml is enough to kill most types of Candida (1). Clotrimazole is also active against moulds such as *Aspergillus fumigates*, *Aspergillus flavus*, *Aspergillus nidulans, Aspergillus niger*, and against species of Penicillium, Cladosporium and Mucor.
The spectrum of activity of Clotrimazole further includes Nocardia species, *Corynebacterium minutissimum*, *Malassezia furfur* and several gram-positive bacteria such as Staphylococcus and Streptococcus.

5.2 Pharmacokinetic properties

Gentamicin

Gentamicin is excreted in the name unrine by glomerular filtration.
The clearance of the drug roughly paralles that of cretinine. Urinary concentration range from 50 to 100 times those in plasma except in cases of every severe renal dysfunction where they are only three times the peakkkk concentration in the plasma.

Clotrimazole

In the case of pharmaceuticals for topical application the most relevant points of discussion as regards pharmacokinetics include the penetration capability of the substance to the relevant skin layers, the concentrations which are reached as well as the question of a possible systemic effect. Test were performed with Clotrimazole, which has been marked with radioactive carbon, to determine how far Clotrimazole, after topical application, penetrates healthy and eczematous altered human skin and mucous membrane of the vagina, whereby the unchanged active ingredient and its metabolites were recorded in the tissue and body fluid. Clotrimazole in a 1% concentration was available for the dermal application. Stationary clinical trials were performed on 16 healthy volunteers (2). To test the level of penetration of the substance into healthy and acutely inflamed skin and to localize the substance in the individual layers of skin, the radioactivity was determined in samples of the serum, urine and skin.

The tests showed that no measurable quantities of radioactivity could be found in the serum of 8 volunteers with healthy skin and 1 volunteer with eczema, 48 hours after dermal application of Clotrimazole. The equivalent concentrations of Clotrimazole were therefore under the limit of detection, which was declared at 1mg/ml serum.

Less than 0.5% of the activity, which was applied to the skin, was excreted in the urine, within a period of 5 days after the application of Clotrimazole. In one case of skin which had been altered by inflammation, the rate of excretion in urine of the applied activity was three times that of healthy skin.

The tests for penetration levels after locally applying Clotrimazole to the skin showed that the substance penetrates easily to the various layers of the skin.

The penetration rate is so good, that minimal impeding concentrations for most types of fungi in the epidermis are reached and easily exceeded 6 hours after application. The equivalent concentrations of Clotrimazole are estimated to be 50-100µg/cm^3 in the Stratum corneum, 3-6µg/cm^3 in the stratum spinosum and 1-5-3µg/cm^3 in the stratum basale/pap, cont. 20ilare. Depending on depth the concentrations in the corium sink as far as 0.5 µg/cm^3.

Tests to determine the rate of penetration of Clotrimazole into the mucous membrane of the vagina were performed with radioactive-carbon marked Clotrimazole, whereby the unchanged active ingredient and its metabolites were recorded in the tissue and body fluid. To determine the rate of penetration through the mucous membrane, the radioactivity was measured in the serum and urine.

The tests showed that after vaginal application of 100mg of radioactive marked substance, only 0.36µg/ml of the equivalent concentration could be found in the serum. From these figures one can estimate a resorption rate of about 3% (1, 2).

In conclusion one can say that Clotrimazole when applied topically easily penetrates to the

relevant areas of the skin, whereby systemic concentrations are practically neglected. Systemic pharmacokinetic parameters are therefore only shortly discussed here.

The binding to plasma protein is more than 50%, which has been shown in tests with the systemic administration of Clotrimazole. The substance is practically completely metabolized in the organism, with less than 1% of metabolites per dose are excreted with the urine. The elimination half-life of the substance is about 4 hours.

5.3 Preclinical safety data

Non-clinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential, toxicity to reproduction and development.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Stearic acid
Ceto-stearyl alcohol
Cetomacrogol 1000
Propylene glycol
Benzyl alcohol
Purified water
Liquid paraffin (Heavy)

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

48 Months

6.4 Special precautions for storage

Store below 30°C. Protect from light and moisture.

6.5 Nature and contents of container and special equipment for use, administration or implantation

Aluminum tube with internal lacquer coating with seal and plastic screw cap and enclosed in outer carton. Available in pack of size 20g

6.6 Special precautions for disposal and other handling

Any unused medicinal product or waste material should be disposed of in accordance with local requirements

7. APPLICANT/MANUFACTURER

Drugfield Pharmaceuticals Limited
Lynson Chemical Avenue
Km38, Lagos-Abeokuta
Expressway Sango-Otta,
Ogun State, Nigeria
Tel: +2348033513989
Email:Info@drugfieldpharma.com