NAFTIN- naftifine hydrochloride cream
Merz Pharmaceuticals, LLC

NAFTIN®
NAFTIFINE HCl 1%

Rx ONLY

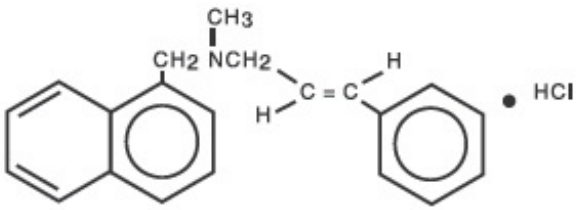
DESCRIPTION

Naftin® Cream, 1% and Naftin® Gel, 1% contain the synthetic, broad-spectrum, antifungal agent naftifine hydrochloride. Naftin® Cream and Gel, 1% are for topical use only.

CHEMICAL NAME

(E)-N-Cinnamyl-N-methyl-1-naphthalenemethylamine hydrochloride. Naftifine hydrochloride has an empirical formula of $C_{21}H_{21}N \cdot HCl$ and a molecular weight of 323.86.

Structural Formula:



naftifine hydrochloride

Contains

Active Ingredient:

Naftifine hydrochloride..... 1%.

Inactive Ingredients: Naftin® Cream, 1% contains benzyl alcohol, cetyl alcohol, cetyl esters wax, isopropyl myristate, polysorbate 60, purified water, sodium hydroxide, sorbitan monostearate, and stearyl alcohol. Hydrochloric acid may be added to adjust pH. Naftin® Gel, 1% contains polysorbate 80, carbomer 934P, diisopropanolamine, edetate disodium, alcohol (52%v/v), and purified water.

CLINICAL PHARMACOLOGY

Naftifine Hydrochloride is a synthetic allylamine derivative. The following *in vitro* data are available but their clinical significance is unknown. Naftifine hydrochloride has been shown to exhibit fungicidal activity *in vitro* against a broad spectrum of organisms, including *Trichophyton rubrum, Trichophyton mentagrophytes, Trichophyton tonsurans, Epidermophyton floccosum, Microsporum canis, Microsporum audouini,* and *microsporum gypseum,* and fungistatic activity against *Candida* species, including *Candida albicans.* Naftin® Cream and Gel, 1% have only been shown to be clinically effective against the disease entities listed in the INDICATIONS AND USAGE section.

Although the exact mechanism of action against fungi is not known, naftifine hydrochloride appears to

interfere with sterol biosynthesis by inhibiting the enzyme squalene 2, 3-epoxidase. This inhibition of enzyme activity results in decreased amounts of sterols, especially ergosterol, and a corresponding accumulation of squalene in the cells.

Pharmacokinetics

In vitro and *in vivo* bioavailability studies have demonstrated that naftifine penetrates the stratum corneum in sufficient concentration to inhibit the growth of dermatophytes.

Following a single topical application of 1% of naftifine cream to the skin of healthy subjects, systemic absorption of naftifine was approximately 6% of the applied dose. Following single topical applications of ^{3}H- labeled naftifine gel 1% to the skin of healthy subjects, up to 4.2% of the applied dose was absorbed. Naftifine and/or its metabolites are excreted via the urine and feces with a half-life of approximately two to three days.

INDICATIONS AND USAGE

Naftin® Cream, 1% is indicated for the topical treatment of tinea pedis, tinea cruris, and tinea corporis caused by the organisms *Trichophyton rubrum, Trichophyton mentagrophytes,* and *Epidermophyton floccosum*. Naftin® Gel, 1% is indicated for the topical treatment of tinea pedis, tinea cruris, and tinea corporis caused by the organisms *Trichophyton rubrum, Trichophyton mentagrophytes, Trichophyton tonsurans*[1], *Epidermophyton floccosum*[1].

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1 Efficacy for this organism in this organ system was studied in fewer than 10 infections.

CONTRAINDICATIONS

Naftin® Cream and Gel, 1% are contraindicated in individuals who have shown hypersensitivity to any of their components.

WARNINGS

Naftin® Cream and Gel, 1% are for topical use only and not for ophthalmic use.

PRECAUTIONS

General

Naftin® Cream and Gel, 1%, are for external use only. If irritation or sensitivity develops with the use of Naftin® Cream or Gel, 1%, treatment should be discontinued and appropriate therapy instituted. Diagnosis of the disease should be confirmed either by direct microscopic examination of a mounting of infected tissue in a solution of potassium hydroxide or by culture on an appropriate medium.

Information for patients

The patient should be told to:

1. Avoid the use of occlusive dressings or wrappings unless otherwise directed by the physician.
2. Keep Naftin® Cream and Gel, 1% away from the eyes, nose, mouth and other mucous membranes.

Carcinogenesis, mutagenesis, impairment of fertility

Long-term studies to evaluate the carcinogenic potential of Naftin® Cream and Gel, 1% have not been performed. *In vitro* and animal studies have not demonstrated any mutagenic effect or effect on fertility.

Pregnancy

Teratogenic Effects

Pregnancy Category B

Reproduction studies have been performed in rats and rabbits (via oral administration) at doses 150 times or more than the topical human dose and have revealed no evidence of impaired fertility or harm to the fetus due to naftifine. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing mothers

It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Naftin® Cream or Gel,1 % are administered to a nursing woman.

Pediatric use

Safety and effectiveness in pediatric patients have not been established.

ADVERSE REACTIONS

During clinical trials with Naftin® Cream, 1%, the incidence of adverse reactions was as follows: burning/stinging (6%), dryness (3%), erythema (2%), itching (2%), local irritation (2%). During clinical trials with Naftin® Gel, 1%. the incidence of adverse reactions was as follows: burning Istinging (5.0%), itching (1.0%), erythema (0.5%), rash (0.5%), skin tenderness (0.5%).

DOSAGE AND ADMINISTRATION

A sufficient quantity of Naftin® Cream, 1% should be gently massaged into the affected and surrounding skin areas once a day. A sufficient quantity of Naftin® Gel, 1% should be gently massaged into the affected and surrounding skin areas twice a day, in the morning and evening. The hands should be washed after application. If no clinical improvement is seen after four weeks of treatment with Naftin® Cream or Gel, 1%, the patient should be re-evaluated.

HOW SUPPLIED

Naftin® (naftifine hydrochloride) Cream. 1% is supplied in collapsible tubes in the following sizes:

60g – NDC 0259-4126-60
90g – NDC 0259-4126-90

Naftin® (naftifine hydrochloride) Gel, 1% is supplied in collapsible tubes in the following sizes:

40g – NDC 0259-4770-40
60g – NDC 0259-4770-60
90g – NDC 0259-4770-90

Note: Store Naftin® Cream, 1% below 30°C (86°F).

Store Naftin® Gel, 1% at room temperature.

Manufactured for **Merz Pharmaceuticals, Greensboro, NC 27410**

PRINCIPAL DISPLAY PANEL - 90g Tube Carton

NDC 0259-4126-90

NAFTIN®
90g cream

NAFTIFINE HCl 1% CREAM

Rx Only

MERZ®

NAFTIN
naftifine hydrochloride cream

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:0259-4126
Route of Administration	TOPICAL		

Active Ingredient/Active Moiety		
Ingredient Name	**Basis of Strength**	**Strength**
NAFTIFINE HYDROCHLORIDE (UNII: 25UR9N9041) (NAFTIFINE - UNII:4FB1TON47A)	NAFTIFINE HYDROCHLORIDE	10 mg in 1 g

Inactive Ingredients	
Ingredient Name	**Strength**
Water (UNII: 059QF0KO0R)	
Isopropyl Myristate (UNII: 0RE8K4LNJS)	
Polysorbate 60 (UNII: CAL22UVI4M)	
Stearyl Alcohol (UNII: 2KR89I4H1Y)	
Cetyl Alcohol (UNII: 936JST6JCN)	
Cetyl Esters Wax (UNII: D072FFP9GU)	
Sorbitan Monostearate (UNII: NVZ4I0H58X)	
Benzyl Alcohol (UNII: LKG8494WBH)	

Product Characteristics			
Color	WHITE	**Score**	
Shape		**Size**	
Flavor		**Imprint Code**	
Contains			

Packaging				
#	**Item Code**	**Package Description**	**Marketing Start Date**	**Marketing End Date**
1	NDC:0259-4126-02	10 in 1 CARTON		
1		2 g in 1 TUBE		
2	NDC:0259-4126-60	1 in 1 CARTON		
2		60 g in 1 TUBE		
3	NDC:0259-4126-90	1 in 1 CARTON		
3		90 g in 1 TUBE		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA019599	06/01/1998	

Labeler - Merz Pharmaceuticals, LLC (126209282)

Revised: 4/2013 Merz Pharmaceuticals, LLC