

**NAFTIFINE HYDROCHLORIDE- naftifine hydrochloride cream**  
**Sun Pharmaceutical Industries, Inc.**

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**Naftifine Hydrochloride**  
**Cream USP, 1%**

Rx ONLY

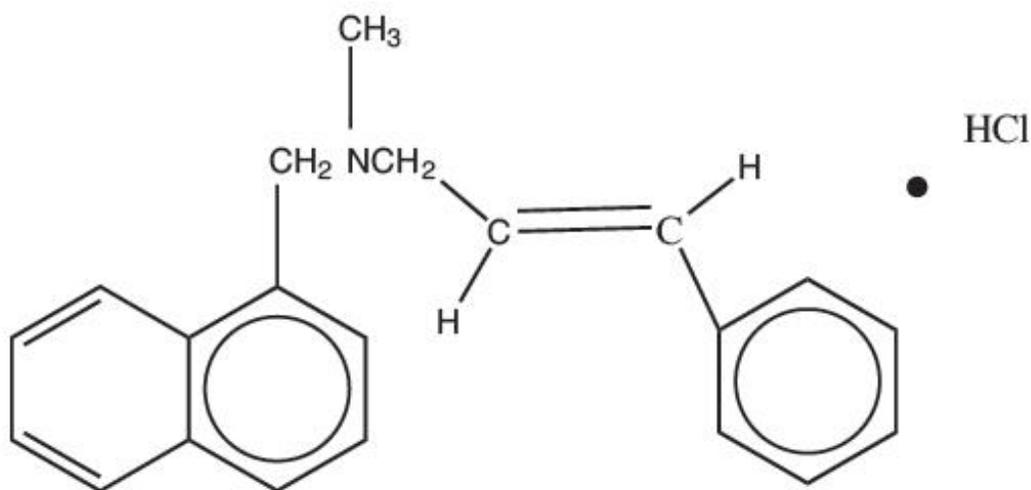
**DESCRIPTION**

Naftifine Hydrochloride Cream USP, 1% contains the synthetic, broad-spectrum, antifungal agent naftifine hydrochloride. Naftifine Hydrochloride Cream USP, 1% is 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

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.

**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*. Naftifine Hydrochloride Cream USP, 1% has 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% naftifine cream to the skin of healthy subjects, systemic absorption of naftifine was approximately 6% of the applied dose. 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**

Naftifine Hydrochloride Cream USP, 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*.

### **CONTRAINDICATIONS**

Naftifine Hydrochloride Cream USP, 1% is contraindicated in individuals who have shown hypersensitivity to any of its components.

### **WARNINGS**

Naftifine Hydrochloride Cream USP, 1% is for topical use only and not for ophthalmic use.

### **PRECAUTIONS**

#### **General**

Naftifine Hydrochloride Cream USP, 1% is for external use only. If irritation or sensitivity develops with the use of Naftifine Hydrochloride Cream USP, 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 Naftifine Hydrochloride Cream USP, 1% away from the eyes, nose, mouth and other mucous membranes.

### **Carcinogenesis, mutagenesis, impairment of fertility**

In a 2-year dermal carcinogenicity study, naftifine hydrochloride cream was administered to Sprague-Dawley rats at topical doses of 1%, 2% and 3% (10 mg/kg/day, 20 mg/kg/day, and 30 mg/kg/day naftifine hydrochloride). No drug-related tumors were noted in this study up to the highest dose evaluated in this study of 30 mg/kg/day [3.6 times the maximum recommended human dose (MRHD) based on mg/m<sup>2</sup> comparison].

Naftifine hydrochloride revealed no evidence of mutagenic or clastogenic potential based on the results of two *in vitro* genotoxicity tests (Ames assay and Chinese hamster ovary cell chromosome aberration assay) and one *in vivo* genotoxicity test (mouse bone marrow micronucleus assay).

Oral administration of naftifine hydrochloride to rats, throughout mating, gestation, parturition and lactation, demonstrated no effects on growth, fertility or reproduction, at doses up to 100 mg/kg/day (12 times MRHD based on mg/m<sup>2</sup> comparison).

### **Pregnancy**

#### Teratogenic Effects

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 Naftifine Hydrochloride Cream USP, 1% is administered to a nursing woman.

### **Pediatric use**

Safety and effectiveness in pediatric patients have not been established.

### **ADVERSE REACTIONS**

During clinical trials with Naftifine Hydrochloride Cream USP, 1%, the incidence of adverse reactions was as follows: burning/stinging (6%), dryness (3%), erythema (2%),

itching (2%), local irritation (2%).

## **DOSAGE AND ADMINISTRATION**

A sufficient quantity of Naftifine Hydrochloride Cream USP, 1% should be gently massaged into the affected and surrounding skin areas once a day. The hands should be washed after application. If no clinical improvement is seen after four weeks of treatment with Naftifine Hydrochloride Cream USP, 1%, the patient should be re-evaluated.

## **HOW SUPPLIED**

Naftifine Hydrochloride Cream USP, 1% is supplied in the following sizes:

15 g - NDC 51672-1362-1 (tube)

30 g - NDC 51672-1362-2 (tube)

60 g - NDC 51672-1362-3 (tube)

90 g - NDC 51672-1362-8 (tube)

**Store at 20° to 25°C (68° to 77°F)**[see USP Controlled Room Temperature].

Manufactured by:

Taro Pharmaceuticals Inc., Brampton, Ontario, Canada L6T 1C1

Distributed by:

**Taro Pharmaceuticals U.S.A., Inc.**, Hawthorne, NY 10532

TARO is a registered trademark of Taro Pharmaceuticals U.S.A., Inc.

Revised: May 2018

PK-7357-2 10

## **PRINCIPAL DISPLAY PANEL - 90 g Tube Carton**

**NDC 51672-1362-8**

**90 g**

**Naftifine Hydrochloride  
Cream USP, 1%**

FOR TOPICAL USE ONLY.  
NOT FOR OPHTHALMIC USE.

**Rx only**

**TARO**

**Keep this and all medications out of the reach of children.**



## NAFTIFINE HYDROCHLORIDE

naftifine hydrochloride cream

### Product Information

<b>Product Type</b>	HUMAN PRESCRIPTION DRUG	<b>Item Code (Source)</b>	NDC:51672-1362
<b>Route of Administration</b>	TOPICAL		

### Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
<b>NAFTIFINE HYDROCHLORIDE</b> (UNII: 25UR9N9041) (NAFTIFINE - UNII:4FB1TON47A)	NAFTIFINE HYDROCHLORIDE	10 mg in 1 g

### Inactive Ingredients

Ingredient Name	Strength
<b>BENZYL ALCOHOL</b> (UNII: LKG8494WBH)	
<b>CETYL ALCOHOL</b> (UNII: 936JST6JCN)	
<b>CETYL ESTERS WAX</b> (UNII: D072FFP9GU)	
<b>ISOPROPYL MYRISTATE</b> (UNII: 0RE8K4LNJS)	

<b>POLYSORBATE 60</b> (UNII: CAL22UVI4M)	
<b>SODIUM HYDROXIDE</b> (UNII: 55X04QC32I)	
<b>WATER</b> (UNII: 059QF0KO0R)	
<b>SORBITAN MONOSTEARATE</b> (UNII: NVZ4I0H58X)	
<b>STEARYL ALCOHOL</b> (UNII: 2KR89I4H1Y)	
<b>HYDROCHLORIC ACID</b> (UNII: QTT17582CB)	

### Product Characteristics

<b>Color</b>	white	<b>Score</b>	
<b>Shape</b>		<b>Size</b>	
<b>Flavor</b>		<b>Imprint Code</b>	
<b>Contains</b>			

### Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:51672-1362-1	1 in 1 CARTON	09/08/2016	
1		15 g in 1 TUBE; Type 0: Not a Combination Product		
2	NDC:51672-1362-2	1 in 1 CARTON	09/08/2016	
2		30 g in 1 TUBE; Type 0: Not a Combination Product		
3	NDC:51672-1362-3	1 in 1 CARTON	09/08/2016	
3		60 g in 1 TUBE; Type 0: Not a Combination Product		
4	NDC:51672-1362-8	1 in 1 CARTON	09/08/2016	
4		90 g in 1 TUBE; Type 0: Not a Combination Product		

### Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA205975	09/08/2016	

**Labeler** - Sun Pharmaceutical Industries, Inc. (146974886)

### Establishment

Name	Address	ID/FEI	Business Operations
Sun Pharma Canada Inc.		243339023	manufacture(51672-1362)