

**LUZU®**  
**(luliconazole) Cream, 1%**  
**For Topical Use**

Revised: 04/2020 9438803



(u) 50105667D

**HIGHLIGHTS OF PRESCRIBING INFORMATION**

These highlights do not include all the information needed to use LUZU safely and effectively. See full prescribing information for LUZU.

**LUZU® (luliconazole) cream, for topical use**

Initial U.S. Approval: 2013

—INDICATIONS AND USAGE—

LUZU (luliconazole) Cream, 1% is an azole antifungal indicated for the topical treatment of interdigital tinea pedis, tinea cruris, and tinea corporis caused by the organisms *Trichophyton rubrum* and *Epidermophyton floccosum*. (1)

—DOSAGE AND ADMINISTRATION—

- For topical use only. Not for ophthalmic, oral, or intravaginal use. (2)
- Interdigital Tinea Pedis: LUZU Cream, 1% should be applied to the affected and immediate surrounding area(s) once a day for 2 weeks. (2)
- Tinea Cruris and Tinea Corporis: LUZU Cream, 1% should be applied to the affected skin and immediate surrounding area(s) once a day for 1 week. (2)

Revised: 04/2020

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**FULL PRESCRIBING INFORMATION**

1 INDICATIONS AND USAGE

LUZU (luliconazole) Cream, 1% is indicated for the topical treatment of interdigital tinea pedis, tinea cruris, and tinea corporis caused by the organisms *Trichophyton rubrum* and *Epidermophyton floccosum*.

2 DOSAGE AND ADMINISTRATION

For topical use only. LUZU Cream, 1% is not for ophthalmic, oral, or intravaginal use.

- When treating interdigital tinea pedis, a thin layer of LUZU Cream, 1% should be applied to the affected area and approximately 1 inch of the immediate surrounding area(s) once daily for 2 weeks.

- When treating tinea cruris or tinea corporis, LUZU Cream, 1% should be applied to the affected area and approximately 1 inch of the immediate surrounding area(s) once daily for 1 week.

3 DOSAGE FORMS AND STRENGTHS

Cream, 1%. Each gram of LUZU Cream, 1% contains 10 mg of luliconazole in a white cream base.

4 CONTRAINDICATIONS

None.

6 ADVERSE REACTIONS

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

In three Phase 3 clinical trials, 616 subjects were exposed to LUZU Cream, 1%: 305 with interdigital tinea pedis and 311 subjects with tinea cruris. Subjects with interdigital tinea pedis or tinea cruris applied LUZU Cream, 1% or vehicle cream once daily for 14 days or 7 days, respectively, to affected and adjacent areas. During clinical trials with LUZU Cream, 1%, the most common adverse reactions were application site reactions which occurred in less than 1% of subjects in both the LUZU and vehicle arms. Most adverse reactions were mild in severity.

A post-approval clinical trial was conducted in 75 subjects age 2 to <18 years old with tinea corporis. The adverse reactions in the LUZU Cream, 1% treated population were similar to the vehicle treated population.

6.2 Postmarketing Experience

The following adverse reactions have been identified during postmarketing use of luliconazole cream, 1%: contact dermatitis and cellulitis. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

7 DRUG INTERACTIONS

An in vivo study in adult subjects with moderate to severe interdigital tinea pedis and tinea cruris showed that LUZU Cream, 1% is mostly a weak inhibitor of CYP2C19. In a separate trial in adolescent subjects with tinea cruris, in vivo blood levels of LUZU Cream, 1%, were seen to approach those levels sufficient to show moderate inhibition of CYP2C19 [see Clinical Pharmacology (12.3)].

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

There are no available data with LUZU Cream, 1% use in pregnant women to inform a drug-associated risk for major birth defects and miscarriage. In animal reproduction studies with pregnant rats and rabbits, there were no adverse developmental effects observed with subcutaneous administration of luliconazole during organogenesis at doses up to 3 and 24 times, respectively, the maximum recommended human dose (MRHD) [see Data].

The background risk of major birth defects and miscarriage for the indicated population is unknown. All pregnancies have a background risk of birth defect, loss, or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2 to 4% and 15 to 20%, respectively.

Data

Animal Data

The animal multiples of human exposure calculations were based on daily dose body surface area (BSA) comparisons (mg/m<sup>2</sup>) for the reproductive toxicology studies described in this section and in Section 13.1. The maximum recommended human dose (MRHD) was set at 8 g 1% cream per day (1.33 mg/kg/day for a 60 kg individual, which is equivalent to 49.2 mg/m<sup>2</sup>/day).

Systemic embryofetal development studies were conducted in rats and rabbits. Subcutaneous doses of 1, 5 and 25 mg/kg/day luliconazole were administered during the period of organogenesis (gestational days 7-17) to pregnant female rats. No treatment-related effects on maternal toxicity or malformations were noted at 25 mg/kg/day (3 times the MRHD based on BSA comparisons). Increased incidences of skeletal variation (14<sup>th</sup> rib) were noted at 25 mg/kg/day. No treatment-related effects on skeletal variation were noted at 5 mg/kg/day (0.6 times the MRHD based on BSA comparisons).

Subcutaneous doses of 4, 20 and 100 mg/kg/day luliconazole were administered during the period of organogenesis (gestational days 6-18) to pregnant female rabbits. No treatment-related effects on maternal toxicity, embryofetal toxicity or malformations were noted at 100 mg/kg/day (24 times the MRHD based on BSA comparisons).

In a pre- and postnatal development study in rats, subcutaneous doses of 1, 5 and 25 mg/kg/day luliconazole were administered from the beginning of organogenesis (gestation day 7) through the end of lactation (lactation day 20). In the presence of maternal toxicity, embryofetal toxicity (increased prenatal pup mortality, reduced live litter sizes and increased postnatal pup mortality) was noted at 25 mg/kg/day. No embryofetal toxicity was noted at 5 mg/kg/day (0.6 times the MRHD based on BSA comparisons). No treatment effects on postnatal development were noted at 25 mg/kg/day (3 times the MRHD based on BSA comparisons).

8.2 Lactation

Risk Summary

There is no information available on the presence of luliconazole in human milk, the effects of the drug on the breastfed infant, or the effects of the drug on milk production after topical application of LUZU Cream, 1% to women who are breastfeeding. LUZU Cream, 1% has low systemic absorption. The lack of clinical data during lactation precludes a clear determination of the risk of LUZU Cream, 1% to an infant during lactation. Therefore, the developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for LUZU Cream, 1% and any potential adverse effects on the breastfed infant from LUZU Cream, 1% or from the underlying maternal condition.

—DOSAGE FORMS AND STRENGTHS—

Cream, 1% (3)

—CONTRAINDICATIONS—

None. (4)

—ADVERSE REACTIONS—

The most common adverse reactions observed in clinical trials were application site reactions, which occurred in less than 1% of subjects. (6.1)

To report SUSPECTED ADVERSE REACTIONS, contact Bausch Health US, LLC at 1-800-321-4576 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

See 17 for PATIENT COUNSELING INFORMATION and FDA-approved patient labeling.

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#### Drug Interactions

Results of *in vitro* studies indicated that therapeutic doses of LUZU Cream, 1% did not inhibit cytochrome P450 (CYP) enzymes 1A2, 2C9 and 2D6, but can inhibit the activity of CYP2B6, 2C8, 2C19, and 3A4. The most sensitive enzyme, CYP2C19, was further evaluated in an *in vivo* study using omeprazole as a probe substrate in adult subjects with moderate to severe interdigital tinea pedis and tinea cruris. The results showed that LUZU Cream, 1% applied at a daily amount of approximately 4 grams increased the omeprazole systemic exposure (AUC) by approximately 30% compared to the exposure of omeprazole administered alone. LUZU Cream, 1% is considered a weak inhibitor of CYP2C19. For tinea cruris, extrapolation from both *in vitro* inhibition studies and *in vivo* data in adults to the adolescent subjects showed that in some subjects, levels of luliconazole can approach or exceed those required to be a moderate inhibitor of CYP2C19.

Results of *in vitro* studies indicated that therapeutic doses of LUZU Cream, 1% did not induce CYP1A2, 2B6, and 3A4.

#### 12.4 Microbiology

##### Mechanism of Action

Luliconazole is an antifungal that belongs to the azole class. Although the exact mechanism of action against dermatophytes is unknown, luliconazole appears to inhibit ergosterol synthesis by inhibiting the enzyme lanosterol demethylase. Inhibition of this enzyme's activity by azoles results in decreased amounts of ergosterol, a constituent of fungal cell membranes, and a corresponding accumulation of lanosterol.

##### Mechanism of Resistance

To date, a mechanism of resistance to luliconazole has not been described.

LUZU Cream, 1% has been shown to be active against most isolates of the following fungi, both *in vitro* and in clinical infections as described in the INDICATIONS AND USAGE section:

*Trichophyton rubrum*

*Epidermophyton floccosum*

### 13 NONCLINICAL TOXICOLOGY

#### 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Long-term studies to evaluate the carcinogenic potential of LUZU Cream, 1% have not been conducted.

Luliconazole revealed no evidence of mutagenic or clastogenic potential based on the results of two *in vitro* genotoxicity tests (Ames assay and Chinese hamster lung cell chromosomal aberration assay) and one *in vivo* genotoxicity test (mouse bone marrow micronucleus test). In a fertility study in rats, subcutaneous doses of 1, 5 and 25 mg/kg/day luliconazole were administered prior to and during mating and through early pregnancy. Treatment-related effects on reproductive function were noted in females (decreased live embryos and decreased corpus luteum) at 5 and 25 mg/kg/day and males (decreased sperm counts) at 25 mg/kg/day. No treatment-related effects on fertility or reproductive function were noted at 1 mg/kg/day (0.1× MRHD based on BSA comparisons).

### 14 CLINICAL STUDIES

#### 14.1 Interdigital Tinea Pedis

The safety and efficacy of LUZU (luliconazole) Cream, 1% was evaluated in two randomized, double-blind, vehicle-controlled, multi-center clinical trials in 423 subjects with a clinical and culture-confirmed diagnosis of interdigital tinea pedis.

Subjects were randomized to receive LUZU Cream, 1% or vehicle. Subjects applied either LUZU Cream, 1% or vehicle cream to the entire area of the forefeet including all interdigital web spaces and approximately 2.5 cm (1 in) of the surrounding area of the foot once daily for 14 days.

The mean age of the study population was 41 years (range 13 to 78 years); 82% were male; 53% were White and 40% were Black or African American. Signs and symptoms of tinea pedis (erythema, scaling, and pruritus), KOH exam and dermatophyte culture were assessed at baseline, end-of-treatment (Day 14), 2 and 4 weeks post-treatment.

Overall treatment success was defined as complete clearance (clinical cure and mycological cure) at 4 weeks post-treatment.

LUZU Cream, 1% demonstrated complete clearance in subjects with interdigital tinea pedis. Treatment outcomes at 4 weeks post-treatment are summarized in Table 1.

**Table 1: Efficacy Results at 4 Weeks Post-treatment – Interdigital Tinea Pedis**

	Study 1		Study 2	
	LUZU Cream, 1% N=106 n (%)	Vehicle Cream N=103 n (%)	LUZU Cream, 1% N=107 n (%)	Vehicle Cream N=107 n (%)
Complete Clearance <sup>1</sup>	28 (26%)	2 (2%)	15 (14%)	3 (3%)
Effective Treatment <sup>2</sup>	51 (48%)	10 (10%)	35 (33%)	16 (15%)
Clinical Cure <sup>3</sup>	31 (29%)	8 (8%)	16 (15%)	4 (4%)
Mycological Cure <sup>4</sup>	66 (62%)	18 (18%)	60 (56%)	29 (27%)

<sup>1</sup> Proportion of subjects who achieved both clinical cure and mycological cure

<sup>2</sup> Negative KOH and culture and at most mild erythema and/or scaling and no pruritus

<sup>3</sup> Absence of erythema, scaling and pruritus

<sup>4</sup> Negative KOH and negative fungal culture

#### 14.2 Tinea Cruris

The safety and efficacy of LUZU (luliconazole) Cream, 1% was evaluated in a randomized, double-blind, vehicle-controlled, multi-center clinical trial in 256 subjects with a clinical and culture-confirmed diagnosis of tinea cruris. Subjects were randomized to receive LUZU Cream, 1% or vehicle. Subjects applied either LUZU Cream, 1% or vehicle cream to the affected area and approximately 2.5 cm (1 in) of the surrounding area once daily for 7 days.

The mean age of the study population was 40 years (range 14 to 88 years); 83% were male; 58% were White and 34% were Black or African American. Signs and symptoms of tinea cruris (erythema, scaling, and pruritus), positive KOH exam and dermatophyte culture were assessed at baseline, end-of-treatment (Day 7), 2 and 3 weeks post-treatment.

Overall treatment success was defined as complete clearance (clinical cure and mycological cure) at 3 weeks post-treatment.

LUZU Cream, 1% demonstrated complete clearance in subjects with tinea cruris. Treatment outcomes at 3 weeks post-treatment are summarized in Table 2.

**Table 2: Efficacy Results at 3 Weeks Post-treatment – Tinea Cruris**

	LUZU Cream, 1% N=165 n (%)	Vehicle Cream N=91 n (%)
Complete Clearance <sup>1</sup>	35 (21%)	4 (4%)
Effective Treatment <sup>2</sup>	71 (43%)	17 (19%)
Clinical Cure <sup>3</sup>	40 (24%)	6 (7%)
Mycological Cure <sup>4</sup>	129 (78%)	41 (45%)

<sup>1</sup> Proportion of subjects who achieved both clinical cure and mycological cure

<sup>2</sup> Negative KOH and culture and at most mild erythema and/or scaling and no pruritus

<sup>3</sup> Absence of erythema, scaling and pruritus

<sup>4</sup> Negative KOH and negative fungal culture

#### 14.3 Tinea Corporis

The safety and efficacy of LUZU (luliconazole) Cream, 1% was evaluated in a randomized, double-blind, vehicle-controlled, multi-center clinical trial in 75 subjects age 2 to <18 years old with a clinical and culture-confirmed diagnosis of tinea corporis. Subjects were randomized to receive LUZU Cream, 1% or vehicle cream.

Subjects applied either LUZU Cream, 1% or vehicle cream to the affected area and approximately 2.5 cm (1 in) of the surrounding skin once daily for 7 days.

The mean age of the study population was 8 years; 72% were male; 36% were White and 64% were Black or African American. Signs and symptoms of tinea corporis (erythema, scaling, and pruritus), positive KOH exam and dermatophyte culture were assessed at baseline, end-of-treatment (Day 7), 2 and 3 weeks post-treatment.

Treatment outcomes at 3 weeks post-treatment are summarized in Table 3.

**Table 3: Efficacy Results at 3 Weeks Post-treatment – Tinea Corporis**

	LUZU Cream, 1% N=51 n (%)	Vehicle Cream N=14 n (%)
Complete Clearance <sup>1</sup>	36 (71%)	5 (36%)
Effective Treatment <sup>2</sup>	39 (77%)	8 (57%)
Clinical Cure <sup>3</sup>	41 (80%)	6 (43%)
Mycological Cure <sup>4</sup>	41 (80%)	8 (57%)

<sup>1</sup> Proportion of subjects who achieved both clinical cure and mycological cure

<sup>2</sup> Negative KOH and culture and at most mild erythema and/or scaling and no pruritus

<sup>3</sup> Absence of erythema, scaling and pruritus

<sup>4</sup> Negative KOH and negative fungal culture

#### 16 HOW SUPPLIED/STORAGE AND HANDLING

LUZU (luliconazole) Cream, 1% is a white cream supplied in tubes as follows:

60 g NDC 99207-850-60

Store at 20° to 25°C (68° to 77°F); excursions permitted from 15° to 30°C (59° to 86°F) [see USP Controlled Room Temperature].

#### 17 PATIENT COUNSELING INFORMATION

Advise the patient to read the FDA-approved patient labeling (Patient Information).

- Inform patients that LUZU Cream, 1% is for topical use only. LUZU Cream, 1% is not intended for intravaginal or ophthalmic use.

##### Distributed by:

Bausch Health US, LLC

Bridgewater, NJ 08807 USA

##### Manufactured by:

Bausch Health Companies Inc.

Laval, Quebec H7L 4A8, Canada

U.S. Patent Numbers: 8,980,931; 9,012,484; 9,199,977 and 9,453,006

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PATIENT INFORMATION LUZU® (loo-zoo) (luliconazole) Cream, 1%	
<b>Important information:</b> LUZU Cream is for use on skin only. Do not get LUZU Cream near or in your eyes, mouth or vagina.	
<b>What is LUZU Cream?</b> LUZU Cream is a prescription medicine used on the skin (topical) to treat fungal infections in people with athlete's foot that is between the toes, jock itch, and ringworm.	
Before using LUZU Cream, tell your doctor about all of your medical conditions, including if you: <ul style="list-style-type: none"> <li>are pregnant or plan to become pregnant. It is not known if LUZU Cream will harm your unborn baby.</li> <li>are breastfeeding or plan to breastfeed. It is not known if LUZU Cream passes into your breast milk.</li> </ul>	
<b>Tell your doctor about all of the medicines you take,</b> including prescription and over-the-counter medicines, vitamins, and herbal supplements.	
<b>How should I use LUZU Cream?</b> <ul style="list-style-type: none"> <li>Use LUZU Cream exactly as your doctor tells you to use it.</li> <li>If you have athlete's foot between the toes, apply a thin layer of LUZU Cream to the affected skin areas and to about 1 inch of the surrounding skin 1 time a day for 2 weeks.</li> <li>If you have jock itch or ringworm, apply LUZU Cream to the affected skin areas and to about 1 inch of the surrounding skin 1 time a day for 1 week.</li> <li>Wash your hands after you apply LUZU Cream.</li> </ul>	
<b>What are the possible side effects of LUZU Cream?</b> LUZU Cream may cause skin reactions at the treatment site. Skin irritation may happen with LUZU Cream. Tell your doctor if you have any skin reactions on the areas of your skin treated with LUZU Cream. These are not all the possible side effects of LUZU Cream. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.	
<b>How should I store LUZU Cream?</b> Store LUZU Cream at room temperature between 68°F to 77°F (20°C to 25°C).	
<b>Keep LUZU Cream and all medicines out of the reach of children.</b>	
<b>General information about the safe and effective use of LUZU Cream</b> Medicines are sometimes prescribed for purposes other than those listed in a Patient Information leaflet. Do not use LUZU Cream for a condition for which it was not prescribed. Do not give LUZU Cream to other people, even if they have the same symptoms that you have. It may harm them. You can ask your pharmacist or doctor for information about LUZU Cream that is written for health professionals.	
<b>What are the ingredients in LUZU Cream?</b> <b>Active ingredient:</b> luliconazole <b>Inactive ingredients:</b> benzyl alcohol, butylated hydroxytoluene, ceteostearyl alcohol, isopropyl myristate, medium-chain triglycerides, methylparaben, polysorbate 60, propylene glycol, purified water, sorbitan monostearate.	
<b>Distributed by:</b> Bausch Health US, LLC Bridgewater, NJ 08807 USA	
<b>Manufactured by:</b> Bausch Health Companies Inc. Laval, Quebec H7L 4A8, Canada	
U.S. Patent Numbers: 8,980,931; 9,012,484; 9,199,977 and 9,453,006	
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This Patient Information has been approved by the U.S. Food and Drug Administration.	
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