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# Terbinafine

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**Terbinafine**, sold under the brand name **Lamisil** among others, is an [antifungal medication](#) used to treat [ringworm](#), [pityriasis versicolor](#), and [fungal nail infections](#).<sup>[1][2]</sup> It is either taken by mouth or applied to the skin as a cream or ointment.<sup>[1][3]</sup> The cream and ointment are not effective for nail infections.<sup>[4]</sup>

Common side effects when taken by mouth include nausea, diarrhea, headache, cough, rash, and [elevated liver enzymes](#).<sup>[1]</sup> Severe side effects include [liver problems](#) and [allergic reactions](#).<sup>[1]</sup> Use during [pregnancy](#) is not typically recommended.<sup>[1]</sup> The cream and ointment may result in itchiness but are generally well tolerated.<sup>[2]</sup> Terbinafine is in the [allylamines](#) family of medications.<sup>[1]</sup> It works by decreasing the ability of fungi to make [sterols](#).<sup>[1]</sup>

Terbinafine was discovered in 1991.<sup>[5]</sup> It is on the [World Health Organization's List of Essential Medicines](#), the most effective and safe medicines needed in a [health system](#).<sup>[6]</sup> The wholesale cost in the [developing world](#) is about 2.20 USD for a 20 gm tube.<sup>[7]</sup> In the United States a course of treatment costs less than 25 USD and is available [over the counter](#).<sup>[4]</sup>

## Contents

[hide]

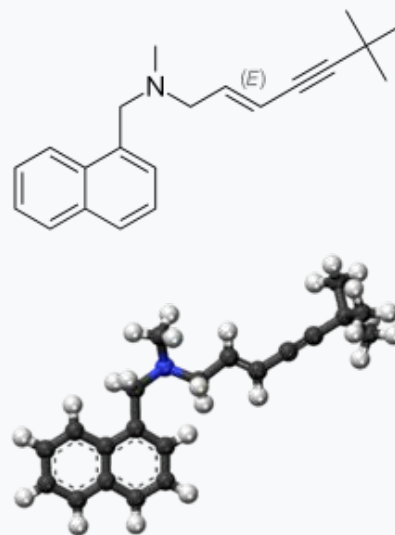
- [Medical uses](#)
  - [1.1 FDA approval](#)
- [Side effects](#)
- [Pharmacology](#)
- [Brand names](#)
- [Production](#)
- [References](#)

## Medical uses [edit]

Terbinafine is mainly effective on the [dermatophyte](#) group of fungi.

As a cream or powder, it is used [topically](#) for superficial skin infections such as [jock itch](#) (tinea cruris), [athlete's foot](#) (tinea pedis), and other types of [ringworm](#) (tinea corporis). Terbinafine cream works in about half the time required by other<sup>[8]</sup>

### Terbinafine



#### Clinical data

<b>Trade names</b>	Lamisil, others
<b>AHFS/Drugs.com Monograph</b> <span><span>[</span>↗<span>]</span></span>	
<b>MedlinePlus</b>	<a href="#">a699061</a> <span><span>[</span>↗<span>]</span></span>
<b>Pregnancy category</b>	US: <b>B</b> (No risk in non-human studies)
<b>Routes of administration</b>	by mouth and <a href="#">topical</a>
<b>ATC code</b>	<a href="#">D01AE15</a> (WHO <span><span>[</span>↗<span>]</span></span> ) <a href="#">D01BA02</a> (WHO <span><span>[</span>↗<span>]</span></span> )

#### Legal status

<b>Legal status</b>	Low-strength topical preparations available without prescription
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#### Pharmacokinetic data

<b>Bioavailability</b>	Readily absorbed: 70–90%
<b>Protein binding</b>	>99%
<b>Metabolism</b>	liver
<b>Biological half-life</b>	Highly variable



Terbinafine [hydrochloride](#) is a white fine crystalline powder that is freely soluble in [methanol](#) and [dichloromethane](#), soluble in [ethanol](#), and slightly soluble in water. It is highly [hydrophobic](#) and tends to accumulate in [hair](#), skin, [nails](#), and [fatty tissue](#).

Like other allylamines, terbinafine inhibits [ergosterol](#) synthesis by inhibiting [squalene epoxidase](#), an enzyme that is part of the fungal [cell membrane](#) synthesis pathway. Because terbinafine prevents conversion of [squalene](#) to [lanosterol](#), [ergosterol](#) cannot be synthesized. This is thought to change cell membrane permeability, causing fungal cell [lysis](#).



Generic terbinafine hydrochloride pills

## Brand names [edit]

Terbinafine is sold in India as Terboderm by Omega Pharma and Tyza (Abbott Healthcare), <sup>[16]</sup> Lamisil in Argentina, Australia, Belgium, Brazil, Canada, Chile, Croatia, Egypt, Czech, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Mexico, the Netherlands, New Zealand, Norway, Pakistan (), Peru, the Philippines, <sup>[17]</sup> Romania, Russia, Slovakia, Slovenia, South Africa, Sweden, Thailand, the United Kingdom, the United States, and Venezuela; also it is sold under the name Corbinal and Terbisil in Turkey, and Undofen in Poland. As a generic oral medication, it is sold as Sebifin, Tinasil, Terbisil, Terbicor, and Tamsil in Australia, whilst the generic topical medication is sold there as SolvEasyTinea and Tamsil. <sup>[18][19]</sup> It is also available as a generic medication in the United States, the United Kingdom, Belgium, Switzerland, Brazil and Mexico. In India, terbinafine hydrochloride is available in topical form under the brand names Triabin by Medley Pharmaceuticals, Sebifin (Sun Pharma), Zimig (GSK Pharma) and mycoCeaze (Progrés Laboratories). MycoVa, developed by [Apricus Biosciences](#), is a topical nail solution of terbinafine and [DDAIP](#), which has completed three phase-III studies for the treatment of [onychomycosis](#). Other names include Terbinaforce ([Mankind Pharma](#)) and Tafine (Deurali Janta Pharmaceuticals Pvt Ltd.) Turbo (Apex Pharmaceuticals Pvt Ltd) in Nepal. The topical form is sold as LamisilAT in the United States.

## Production [edit]

Terbinafine is produced from N-methyl-1-naphthalenemethanamine, 1,3-dichloropropene, and [neohexene](#). <sup>[20]</sup>

## References [edit]

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V · I · E ·		<b>Antifungals (D01 and J02)</b>		[hide]
<b>Wall/</b>	<b>Ergosterol inhibitors</b>	<b>Azoles (lanosterol 14α-demethylase inhibitors)</b>	<b>Imidazoles</b>	Topical: <ul style="list-style-type: none"> <li><a href="#">bifonazole</a><sup>‡</sup> ·</li> <li><a href="#">butoconazole</a> ·</li> <li><a href="#">chlormidazole</a><sup>‡</sup></li> <li>· <a href="#">clotrimazole</a><sup>#</sup></li> <li>· <a href="#">croconazole</a><sup>‡</sup></li> <li>· <a href="#">eberconazole</a></li> <li>· <a href="#">econazole</a> ·</li> <li><a href="#">fenticonazole</a><sup>‡</sup></li> <li>· <a href="#">flutrimazole</a> ·</li> <li><a href="#">isoconazole</a><sup>‡</sup> ·</li> <li><a href="#">ketoconazole</a> ·</li> <li><a href="#">luliconazole</a> ·</li> <li><a href="#">miconazole</a><sup>#</sup> ·</li> <li><a href="#">neticonazole</a><sup>‡</sup> ·</li> <li><a href="#">omoconazole</a><sup>‡</sup></li> <li>· <a href="#">oxiconazole</a> ·</li> <li><a href="#">sertaconazole</a> ·</li> <li><a href="#">sulconazole</a> ·</li> <li><a href="#">tioconazole</a> ·</li> </ul> Systemic: <ul style="list-style-type: none"> <li>ketoconazole ·</li> </ul>
				Topical: <ul style="list-style-type: none"> <li><a href="#">efinaconazole</a> ·</li> <li><a href="#">fluconazole</a><sup>#</sup> ·</li> <li><a href="#">fosfluconazole</a> ·</li> <li><a href="#">terconazole</a> ·</li> </ul> Systemic:

<b>membrane</b>			<b>Triazoles</b>	<ul style="list-style-type: none"> <li>fluconazole<sup>#</sup> · <a href="#">hexaconazole</a><sup>‡</sup> · <a href="#">isavuconazole</a> · <a href="#">itraconazole</a> · <a href="#">posaconazole</a> · <a href="#">voriconazole</a> · Unknown: <a href="#">albaconazole</a><sup>‡</sup> · <a href="#">ravuconazole</a><sup>‡</sup> ·</li> </ul>
			<b>Thiazoles</b>	<ul style="list-style-type: none"> <li>Topical: <a href="#">abafungin</a><sup>‡</sup> ·</li> </ul>
		<b>Polyene antimycotics (ergosterol binding)</b>	<ul style="list-style-type: none"> <li>Topical: <a href="#">hamycin</a><sup>‡</sup> · <a href="#">natamycin</a> · <a href="#">nystatin</a><sup>#</sup> · Systemic: <a href="#">amphotericin B</a><sup>#</sup> , <a href="#">hamycin</a><sup>‡</sup> ·</li> </ul>	
		<b>Squalene monooxygenase inhibitors</b>	<b>Allylamines</b>	<ul style="list-style-type: none"> <li>Topical: <a href="#">naftifine</a> · <b>terbinafine</b> · Systemic: <a href="#">terbinafine</a> ·</li> </ul>
			<b>Benzylamines</b>	<ul style="list-style-type: none"> <li>Topical: <a href="#">butenafine</a> ·</li> </ul>
		<b>Others</b>	<ul style="list-style-type: none"> <li>Topical: <a href="#">amorolfine</a> ·</li> </ul>	
	<b><a href="#">β-glucan synthase inhibitors</a></b>	<ul style="list-style-type: none"> <li><a href="#">echinocandins</a> (<a href="#">anidulafungin</a> · <a href="#">biafungin</a> · <a href="#">caspofungin</a> · <a href="#">cilofungin</a> · <a href="#">micafungin</a>) ·</li> </ul>		
<b>Intracellular</b>	<b><a href="#">Pyrimidine analogues/thymidylate synthase inhibitors</a></b>		<ul style="list-style-type: none"> <li><a href="#">flucytosine</a><sup>#</sup> ·</li> </ul>	
	<b><a href="#">Mitotic inhibitors</a></b>		<ul style="list-style-type: none"> <li><a href="#">griseofulvin</a><sup>#</sup> ·</li> </ul>	
	<b><a href="#">Aminoacyl tRNA synthetase inhibitors</a></b>		<ul style="list-style-type: none"> <li><a href="#">tavaborole</a> ·</li> </ul>	
<b>Others</b>	<ul style="list-style-type: none"> <li><a href="#">bromochlorosalicylanilide</a> · <a href="#">chlorophetanol</a> · <a href="#">chlorphenesin</a> · <a href="#">ciclopirox</a> · <a href="#">crystal violet</a> · <a href="#">dimazole</a> · <a href="#">ethylparaben</a> · <a href="#">haloprogin</a><sup>‡</sup> · <a href="#">polynoxylin</a> · <a href="#">potassium iodide</a><sup>#</sup> · <a href="#">salicylic acid</a> · <a href="#">selenium disulfide</a><sup>#</sup> · <a href="#">sodium thiosulfate</a><sup>#</sup> · <a href="#">sulbentine</a> · <a href="#">taurolidine</a> · <a href="#">ticlatone</a> · <a href="#">tolciclate</a> · <a href="#">tolnaftate</a> · <a href="#">tribromometacresol</a> · <a href="#">undecylenic acid</a> · <a href="#">Whitfield's ointment</a><sup>#</sup> · <a href="#">citronella oil</a> · <a href="#">lemon grass</a> · <a href="#">lemon myrtle</a> · <a href="#">orange oil</a> · <a href="#">patchouli</a> · <a href="#">tea tree oil</a> · <b>PCP</b>: <a href="#">atovaquone</a> · <a href="#">dapsons</a> · <a href="#">pentamidine</a> ·</li> </ul>			
<ul style="list-style-type: none"> <li><sup>#</sup><a href="#">WHO-EM</a> · <sup>‡</sup><a href="#">Withdrawn</a> from market · <b>Clinical trials</b>: ( <sup>†</sup><a href="#">Phase III</a> · <sup>§</sup>Never to phase III · ·</li> </ul>				

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