

Based on the research provided, the following herbs and natural compounds have been identified as having specific potential against fungal infections of the lung (such as *Aspergillus*), which can lead to fungal abscesses (aspergillomas) or invasive pulmonary fungal disease.

## Tier 1: New & Lesser-Known Herbal Discoveries for Fungal Lung Infections

### 1. Fish Mint (Sodium New Houttuynonate)

- **Efficacy:** Very High. Recent studies have isolated a derivative called Sodium New Houttuynonate (SNH) from this herb. It was found to be highly efficacious against *Aspergillus flavus* and *Aspergillus fumigatus*, the primary causes of fungal lung abscesses (aspergillomas). In animal models of invasive pulmonary aspergillosis, it significantly reduced the fungal load in the lungs, decreased pathological lung damage, and suppressed inflammatory cytokines (IL-6, TNF- $\alpha$ ).
- **Common Name:** Fish Mint or Chameleon Plant
- **Place of Origin:** Southeast Asia, China, Japan
- **Sourced From:** Whole herb / Aerial parts
- **Commercial Availability:** The herb is available as tea or fresh; SNH is a specialized extract derivative used in research and some Asian pharmaceutical preparations.
- **Name:** Fish Mint (*Houttuynia cordata*)

### 2. Pine (Pinosylvin)

- **Efficacy:** High. Pinosylvin is a stilbenoid toxin found in the heartwood of pine trees. It has demonstrated potent antimicrobial activity, specifically exerting antifungal effects. Research highlights its potential as a multifunctional natural agent that works as an antimicrobial, antioxidant, and anti-inflammatory, making it a strong candidate for treating complex fungal infections.
- **Common Name:** Pine (constituent found in heartwood)
- **Place of Origin:** Northern Hemisphere (Temperate regions)
- **Sourced From:** Wood/Needles of Pine trees
- **Commercial Availability:** Pine bark extracts are common; isolated Pinosylvin is less commercially available to consumers but present in pine-derived supplements.
- **Name:** Pine (*Pinus* species / Pinosylvin)

### 3. Ursolic Acid Methyl Ester (Plant Triterpenoid)

- **Efficacy:** High. This natural compound, found in various herbs (such as *Prunella vulgaris* and *Paulownia*), showed significant activity against drug-resistant fungal strains, including *Aspergillus*, *Cryptococcus*, and *Candida*. It is particularly noted for its potential against multidrug-resistant pathogens that standard antifungal drugs struggle to eradicate.
- **Common Name:** Ursolic Acid derivative (found in Self-heal, Holy Basil, Peppermint peels)
- **Place of Origin:** Global (compound found in many plants)
- **Sourced From:** Waxy coatings of leaves and fruits, herbs
- **Commercial Availability:** Available as a chemical standard; herbs rich in ursolic acid (like Holy Basil) are widely available.
- **Name:** Ursolic Acid Methyl Ester

## Tier 1: Well-Known Natural Compounds for Fungal Lung Infections

### 1. Black Pepper (Piperine)

- **Efficacy:** High. Piperine, the active alkaloid in black pepper, has been documented to possess potent antifungal activity against members of the *Aspergillus* family and *Candida albicans*. It is suggested as a promising candidate for management of fungal infections due to its ability to enhance the bioavailability of other therapeutic agents and its direct antimicrobial effects.
- **Name:** Black Pepper (*Piper nigrum*)

### 2. Turmeric (Curcumin)

- **Efficacy:** High. Curcumin is widely recognized for its broad antimicrobial properties. Specific reviews on respiratory mycosis indicate its activity against *Aspergillus* species. It is noted for having few side effects while offering antifungal protection, potentially enhancing the inhibitory effect of existing treatments.
- **Name:** Turmeric (*Curcuma longa*)

## Summary Table of Herbs for Fungal Lung Abscess/Infection

Rank	Common Name	Latin Name	Active Compound	Target Fungi	Commercial Availability
1	Fish Mint	<i>Houttuynia cordata</i>	Sodium New Houttuynifonate	<i>Aspergillus flavus/fumigatus</i>	High (Tea/Extract)
2	Pine	<i>Pinus spp.</i>	Pinosylvin	General Fungal	Medium (Extracts)
3	Self-heal/Basil	Various	Ursolic Acid Methyl Ester	Resistant <i>Aspergillus</i> / <i>Cryptococcus</i>	High (Herbs)
4	Black Pepper	<i>Piper nigrum</i>	Piperine	<i>Aspergillus spp.</i>	Very High (Spice/Extract)
5	Turmeric	<i>Curcuma longa</i>	Curcumin	" <i>Aspergillus</i> , <i>Candida</i> "	Very High (Supplement)

1, 2, 3, 4, 5, 6, 7, 8, 9