

Help Fight TB With Mushrooms

The TB Problem: Tuberculosis infects one third of the world's population, with particularly devastating consequences in developing countries. TB strains that are extremely resistant to known therapies have recently emerged, and they are being spread worldwide through global travel. There is a desperate need for new drugs to fight all forms of TB.

The Mushroom Solution: A local University of British Columbia research team –including VMS's own Vivian Miao, Santiago Ramon Garcia, Terry Taylor, and Ryan Centko – is surveying mushroom compounds for their potential to inhibit growth of the tuberculosis pathogen. Initial results of screening extracts from mushrooms collected by VMS members for the VMS Fall 2007 Mushroom Show have been encouraging. The researchers are now attempting to obtain larger amounts of the most promising mushroom species to confirm their earlier results.

How VMS Can Help: The researchers need many more specimens of at least eight local mushroom species, listed and described below. **If you find these mushrooms during your forays, please e-mail the researchers at VMX2010@me.com** and they will contact you to arrange a speedy pick-up or drop-off. If you have questions about identifying or preparing the mushroom species, just e-mail the researchers for help.

The Anti-TB Mushrooms:

Clavulina cinerea: grey, coral-like clusters about 50 cm tall. Clusters joined at base. On ground in coniferous forests. *Clavulina cristata* is similar, but is white, with small teeth at apex, and is not needed for this research.

Clitocybe clavipes: brownish, funnel-shaped cap, depressed in centre. Smooth, not sticky. Long decurrent white gills, white spores. On ground, in forests. No odor. Whitish stem, club-shaped, widest at base. About 5 cm tall. Grows singly.

Hericiium abietis: large, compact, white, coral-like clusters up to 30 cm in diameter, attached to conifer logs. Surface covered by short, cascading branches with 1-cm-long icicle-like spines.

Hypholoma capnoides: (*Naematoloma capnoides*) clusters on conifer logs and stumps. Convex, smooth, orange-yellow cap. Not sticky. Gills gray and close together. Purple spore print. Usually late in season, end of October into November. Long, yellowish, slender stem. About 7 cm tall.

Hypholoma fasciculare: (*Naematoloma fasciculare*) large clusters of yellow mushrooms on logs and stumps. Very common. Gills bright yellow; very few mushrooms have yellow gills. Purple spore print. About 7 cm tall. Look for yellow mushroom with yellow gills, on wood.

Paxillus atrotomentosus: (*Tapinella atrotomentosa*) thick, stout mushroom on rotten conifer wood. Thick stem densely covered by velvety, dark wine-red fuzz. Stem usually off-centre. Gills creamish, and can be peeled away from cap. Cap yellow-brown to brown, and inrolled when young. Stains brown when bruised. Gills run down stem. Cap 5 cm or more in diameter. Dark velvety stem is a unique feature of this mushroom.

Ramaria celerivirescens: large, bright orange coral fungus. Compact, with many branches close together. On ground in coniferous forests. 15 cm tall. Brown streaks inside the base. There are similar species, and the researchers will work on any large orange coral fungi.

Stropharia ambigua: tall, slender, yellow-capped mushroom. On ground, usually in mixed or deciduous forest. Likes rich humus. Long, white veil patches on edge of cap, centre of cap smooth, with greyish gills. White stem with delicate white scales. White rootlike threads grow from mushroom base into soil. About 10 cm tall. Spores purple. Look for yellow cap with delicate white fragments on edge. Amanita gemmata is similar, but has ring and volva, and veil remains are more robust.