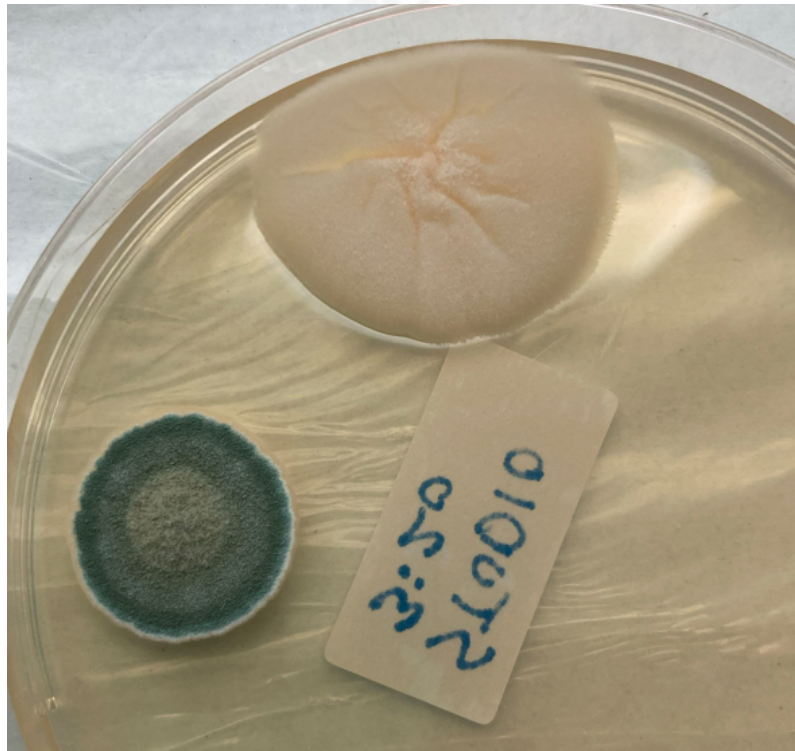
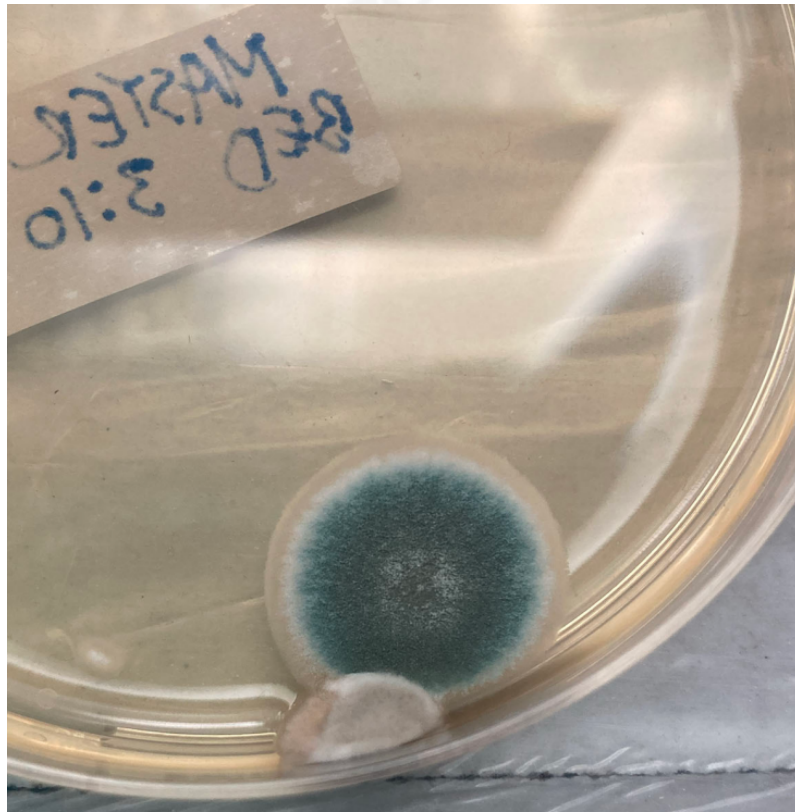




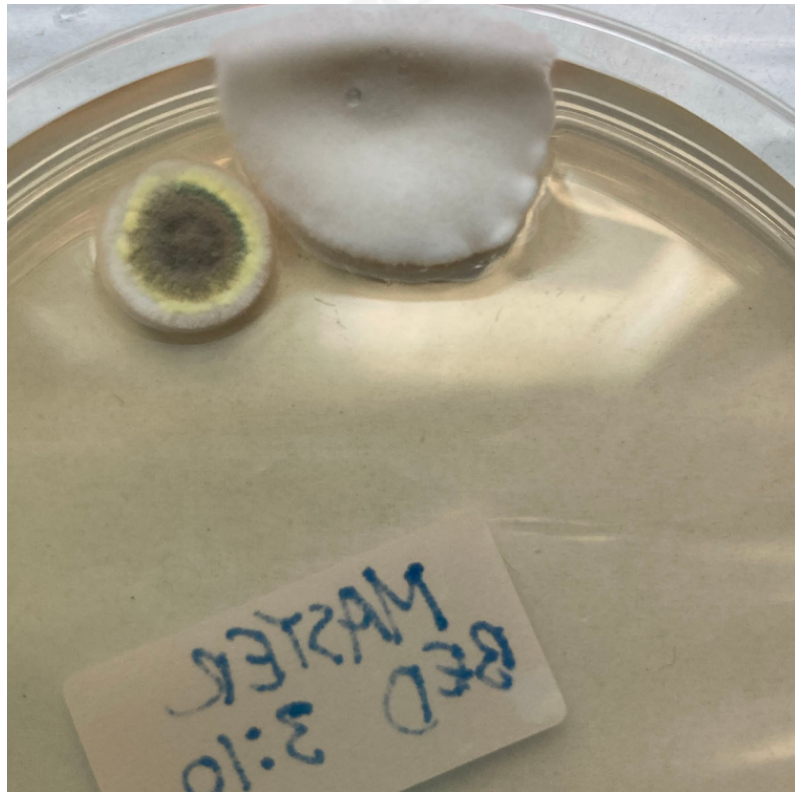
The Petri dish contains *Penicillium viridicatum* and *Mucor*.

NOTE: Detailed descriptions of the molds can be found at the end of this report.



The Petri dish contains *Penicillium viridicatum* and *Mucor*.

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The Petri dish contains *Penicillium glaucum* and *Mucor*.

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Introduction to Molds

1). *Penicillium viridicatum*

Penicillium viridicatum is widely distributed in nature and can be found in various environments such as soil, air, and plant residues.

Metabolic products and toxicity: Some strains can produce toxins such as ochratoxin A and citrinin, as well as metabolic products like penicillin G, *penicillium viridicatum* alcohol, *penicillium viridicatum* acid, cyclopiazonic acid, cyclopiazonic alcohol, mycophenolic acid, and brevianamide A. Chemical identification results and animal toxicity tests indicate that some of these metabolic products are related to the toxicity of *Penicillium viridicatum*, such as penicillic acid and *viridicatum* acid.

Applications and hazards: As an important microbial resource, *Penicillium viridicatum* holds an important position in the medical field and shows potential application value in food industry, biodegradation, and enzyme production. However, it may also become a conditional pathogen under certain conditions, causing human infections, especially in individuals with compromised immune systems.

2). *Penicillium glaucum*

Penicillium glaucum is widely distributed in nature and is commonly found in soil, air, decaying organic matter, food, leather and other substrates. In industry, it can be used to produce organic acids and enzyme preparations, such as citric acid and gluconic acid.

In the food industry, some strains of *Penicillium glaucum* can be used to make high-quality cheeses, such as Roquefort and Danish blue cheese, endowing these cheeses with unique flavors and textures. In the medical field, griseofulvin produced by *Penicillium glaucum* is an effective antibiotic for treating fungal skin diseases such as athlete's foot.

Penicillium glaucum can also cause moldy deterioration of food, leather, textiles and other items, leading to a decline in their quality and economic losses. At the same time, the mycotoxins it produces, if ingested by humans, may cause damage to the liver, kidneys and other organs, and may also have potential hazards such as carcinogenicity, teratogenicity and mutagenicity.

3). *Mucor*

Basic information: *Mucor* belongs to the Zygomycota phylum, Mucorales order, and

Mucoraceae family. Within this genus, there are many different species, such as *Mucor rouxii* and *Mucor racemosus*.

Distribution: It is widely distributed in soil, air, water, and on the surfaces of various organic materials. In soil, *Mucor* participates in the decomposition and transformation of organic matter, playing a significant role in the formation and maintenance of soil fertility. In the air, its spores are carried by air currents and become part of the microbial community in the air. In daily life, *Mucor* can often be found on moldy foods (such as steamed buns, fruits, etc.), damp walls, and the surfaces of furniture.

Food aspect: *Mucor* can cause food to spoil and deteriorate. In high-temperature and high-humidity environments, it can grow rapidly on foods such as bread and fruits, causing the food to develop mold, change color, and develop an unpleasant odor, reducing its edible value and safety.

Human health: *Mucor* is a conditional pathogen. For people with weakened immune systems, such as AIDS patients and those who have undergone organ transplants and are taking immunosuppressants, *Mucor* may cause severe infections, such as mucormycosis. Mucormycosis mainly affects the lungs, sinuses, brain, and other organs, progresses rapidly, and has a high mortality rate.

Industrial aspect: *Mucor* can produce various enzymes, such as proteases, lipases, and amylases, which have potential application value in industrial production.