Eumycetoma: Developing Cheap & Safe Fenarimol Derivatives for Treatment

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Abstract:
Mycetoma is a neglected tropical disease in third world countries. The disease is characterized by the multiple firms, usually painless but devastating masses under the skin. Transmission of the disease occurs with the causative organism, fungi or bacteria, entering the body through a minor trauma most commonly on the lower extremities. The current method of treatment consists of long-term antifungal medication, ketoconazole and itraconazole. These drugs can be very taxing on the body causing side effects like nausea, vomiting and liver failure. With these side effects, the treatment may not be very effective therefore, amputation or surgery is necessary to cut away the infected tissue. These treatment options tend to leave patients in financial ruin with the high cost of antifungal medication and at times hinders their ability to provide for themselves or their family. Thus, it is essential to find affordable and effective antifungal drug treatments for eumycetoma. We propose on synthesizing 6 possible drug options for eumycetoma. There will be 3 heterocycles synthesized and 3 acquired from vendors. After synthesizing all of our desired products we will test the purity of our compound with gas chromatography. Other methods that will also be used will be mass spectroscopy, and H-NMR. The entire purpose of our research is to provide an alternative treatment method to the ones that currently exist. Due to current drugs like ketoconazole and itraconazole being unaffordable for those afflicted with this disease. Our research and synthesis on these target compounds may prove to be effective treatment options for Eumycetoma, while being cost effective due to us selecting reagents that are affordable for our drug synthesis.