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Characterization of Novel Endophytic Isolate Or10-4 and Analysis of Increased Bio-Activity by Addition of Esters

Today there is thought to be over a million species of fungi to exist and approximately 75,000 of those have been scientifically identified, leaving an enormous amount of species still unidentified and under-researched. The work done in Dr. Gary Strobel's lab focuses on the collection of biologically diverse plant material for isolation and classification of fungal endophytic species. Research has shown that these species of endophytes contain novel characteristics that make them of high interest for further research and analysis. Or10-4 is an endophytic isolate from the Canadian hemlock that produces a valuable volatile organic compound (VOC), 6-Pentyl-2H-pyran-2-one, which can be used as an anti-pathogen for crop plants to be applied in large agricultural settings. Analysis of scanning electron microscope (SEM) pictures from spore structures have indicated that Or10-4 is a new species to be taxonomically classified calling for complete rDNA sequencing. Furthermore, tests done on Or10-4 with the addition of esters in bioactivity tests against pathogenic species has shown increased inhibition. The chemistry of the interaction between the esters and VOC's is still being analyzed.