

Brain Tumour Research Studentship Award Report

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During the second summer working on the brain tumour project involving BC wild mushrooms, my focus was directed towards the third objective of my experiment which was isolating, purifying and identifying the anti-cancer compounds described in the previous research update. I aimed to pursue the 50% methanol extract of the tree fungus, which was speculated to contain a small compound, exhibiting on average 80% growth inhibition of the glioblastoma cells. I performed a large scale extraction of the fungus, followed by several large gel filtration runs which further separated the compounds based on size, in order to maximize the amount of material I could work with for further purification.

I then performed dose-dependent analyses on semi-purified fractions, which showed 80% inhibition at a dose that was four-fold lower than the original extract, indicating further purification. In the next set of purification, I developed a set of HPLC (High-Performance Liquid Chromatography) protocols which I used to further isolate the compound. The UV detector which analyzed the compounds coming out of the column showed one significant peak, which was indicative of a pure compound. I then performed several dozen runs in order to obtain the maximum amount of this pure compound.

This compound was then subject to NMR (Nuclear Magnetic Resonance) analysis for structural elucidation and in order to confirm purity. The results indicated that the compound was relatively small and was of high purity, as the peaks obtained in the experiment seemed to be quite clean with little to no background noise. I am currently working on a dose dependent assay in order to confirm activity of this compound and further mass spectrometry analysis, which in conjunction with the NMR data, will allow me to determine the identity of the compound.