Compound and Antiproliferative Analysis of FM1005: A Marine Source Derived Endophytic Fungal Strain

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Natural products from marine organisms and endophytic fungi have been proposed as groundbreaking because of their potential for supplying novel compounds unknown to the biological system. 10 previously isolated endophytic strains from marine organisms were sent to a local cancer center for fungal strain based antiproliferative analysis. Various strains showed prominent antiproliferative activity- dropping the growth of Ovarian and Prostate Cancer Cell lines to the 20% and 50% range viability range, respectively. Methodologies include solid and liquid media preparation/inoculation, open column, fraction separation, and HPLC compound analysis. Analysis involved implementing compound separation methods for the analysis of subfractions, in which UV absorption rates were collected. A UV visible HPLC detector uses light to analyze samples and measure the sample's absorption of light at different wavelengths- organic compounds of similar classifications fall under similar UV absorption rates. Fractional compound analysis was conducted to find probable identifications based upon UV absorption rates, results included the UV absorbance rates of 48 compounds, with a prominence of compounds having UV absorption rates similar to Benzene, Rac-BINAP, and L-Histidine- which can be looked towards when analyzing the structure, nature, and type of compound. Through findings present in this experimentation, we are able to think of innovative marine medical based applications that these antiproliferative compounds could contribute to. A potential application of this data in terms of drug-based development would be to create a medicine or drug that could be applied to the general area of the tumor during surgery to reduce the probability of cancer resurfacing in the patient.

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