

OFFICIAL ABSTRACT and CERTIFICATION

Cancer is known as a disease resulting from irregular cell division caused by a block in its ability to undergo apoptosis or differentiation, however, compounds such as styryl sulfones have been known to possess the ability to force cells to undergo these processes suggesting that they may serve as possible cancer treatments. By synthesizing and performing cell cytotoxic studies on (E)-4-Fluoro Styryl-4-Chlorobenzyl Sulfone, a member of the styryl sulfone family, more information regarding the compound's effectiveness would be obtained.

In the present work, by synthesizing the compound, following basic procedure, and diluting it to various different concentrations we were able to administer the compound to cell samples and acquire both a micro plate reading and an IC50 result. All cell lines and media were obtained from either ATCC or Gibco. Using these results, we learned the efficiency of the compound in specific cell lines, as well as a range of concentrations that may be deemed "practicable" in some form of life. As (E)-4-Fluoro Styryl-4-Chlorobenzyl Sulfone is administered on cancer cells in varying concentrations, the highest concentration should inhibit more than 50% of cell activity.

All concentrations of the compound resulted in a decrease in cell activity, despite a few outliers, it is concluded that this compound does induce a negative effect on cell activity. According to the results, the most efficient concentration was 25 μ M, in which after it was administered on 74.80 % of cells remained active. Although this concentration was both the highest and most efficient, it was not successful in killing off 50% of cell activity suggesting that a higher concentration is needed. This suggests that the compound is not effective in this cell line, allowing us to conclude that the hypothesis was rejected.

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1. As a part of this research project, the student directly handled, manipulated, or interacted with (check ALL that apply):

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This stamp or embossed seal attests that this project is in compliance with all federal and state laws and regulations and that all appropriate reviews and approvals have been obtained including the final clearance by the Scientific Review Committee.

