

Abstract Submitted  
for the TSF21 Meeting of  
The American Physical Society

**Carbon-13 NMR spectroscopic tracking of sugar metabolism in cultured SfXL glioblastoma cells over long incubation time periods** HALEY SACHSE, ASIYE ASAADZADE, LLOYD LUMATA, University of Texas at Dallas — Glioblastoma, the cancer of the cerebral glial cells, is an aggressive type of tumor that is known to be addicted to sugars and exhibit Warburg effect. In this study, we have investigated via carbon-13 ( $^{13}\text{C}$ ) NMR spectroscopy the long-term metabolism of sugars such as glucose in cultured SfXL glioblastoma cells over a four-day period of incubation times. To achieve this, eight flasks of glioblastoma cells were cultured, four were doped with 10mM uniformly labeled  $^{13}\text{C}$  glucose and four were doped with 10mM unlabeled glucose. The flasks were then left to incubate for a set time period. One  $^{13}\text{C}$  glucose vial and one unlabeled glucose vial were then harvested at 24-hours, another pair at 48-hours, another at 72-hours, and the final pair at 96-hours. Both media and cell extracts of each flask were then processed for  $^{13}\text{C}$  NMR analyses. The NMR data showed that lactic acid increased significantly throughout the 96-hour period, and secondary metabolites such as acetate and alanine also increased. The details of the  $^{13}\text{C}$  NMR results for glucose metabolism as well as those of fructose will be presented here. This study is supported by the Welch Foundation grant AT-1877, DOD grants W81XWH-21-1-0176 and W81XWH-19-1-0741, CPRIT grant RP180716, and the UTD CoBRA and SPIRE grants.

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Date submitted: 10 Sep 2021

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