STRONG CHILDREN'S RESEARCH CENTER

Summer 2014 Research Scholar

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ABSTRACT

Title: PRMT1 as a Novel Therapeutic Target in Chemoresistant Neuroblastoma

Background: Neuroblastoma (NB) is one of the most common childhood cancers, stemming from the neural crest,and most often diagnosed in or before the second year of life. High-risk or chemoresistant incidences account for a large percentage of cases and are a significant obstacle to clinical treatment. There are several key oncogenes which have been linked to the development of NB and the poorer prognoses, including MYCN (22% of NB) and ALK (10%).

Amplified MYCN activity has been linked to consistently worse patient outcomes through a complex pathway involving several geneprotein and protein-protein interactions. MYCN is a transcription factor tic agents. It has been further shown in leukemia cell lines that PRMpathw

Objectives: Determine the effect of PRMT1 inhibition on cell behavio treatment with PRMT1 inhibitors increases sensitivity to genotoxic dru PRMT1, EYA1, and methyl-EYA1 in patient samples with patient trea

Results: We examined PRMT1 inhibition in three NB cells lines, two v non-amplified MYCN Treatment with specific PRMT1 inhibitors suppr viability, and induced cell death in both MYCNamplified lines but not t also investigated the effects of PRMT1 inhibition on sensitivity to etop found possible synergistic effects of PRMT1 inhibitors and etoposide a the therapeutic effects of genotoxic agents in NB through the use of PR MYCNamplified cells.

Conclusion: While PRMT1 may still have a role in preserving cell viab cells, it is not to the critical degree as seen in MYCNamplified lines. Th research which has demonstrated a clear link between amplified MYCN poor patient response to chemotherapeutic treatment. PRMT1 -0.0p7-4 clinical importance if effective disruption of the PRMT1-