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Drug targets identified through cell line to potentially treat rare pediatric cancer

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A team of investigators at the Cumming School of Medicine have made key new findings about an extremely rare childhood cancer called neurocutaneous melanocytosis (NCM). This malignant cancer is characterized by an excessive growth of melanin-producing cells in both the skin and the brain. The study's authors found potential drug targets for the disease by using a molecular analysis of patient tumour cells grown in animal models.

The study was led by Drs. Aru Narendran and Ronald Anderson, in the division of hematology, oncology and transplant at the Alberta Children's Hospital. It was published in the journal *Neuro-Oncology*. Both researchers are dual members of the Alberta Children's Hospital Research Institute (ACHRI) and the Southern Alberta Cancer Research Institute (SACRI) at the Cumming School of Medicine.

"This is important because we have shown that real efforts can be made to understand the biology of even extremely rare cancers that have not been studied adequately by researchers in the past," says Dr. Narendran. "In a wider sense, it sets up precedence to search for effective treatments for conditions that are extraordinarily uncommon in children."

"While there is unfortunately no known effective treatment for NCM, this study is an important step in the search for new and effective agents," says Dr. Anderson.

About one per cent of the population is born with congenital melanocytic

nevi, a precursor to neurocutaneous melanocytosis. (NCM) In Canada, only one or two patients are diagnosed with NCM in any given year. Currently, the symptomatic form of this disease carries an extremely poor prognosis with little or no benefit offered by current protocols using chemotherapy and radiation.

The publication describes target drugs and potential new treatments of these children in the future. Dr. Narendran says that the new knowledge gained in these studies will be a catalyst to generate further information about this enigmatic cancer.

The experimental approach taken by the investigators was geared towards gaining maximal biological and drug sensitivity information in very rare tumours where sufficient quantities of tumor specimens are not available.

Provided by University of Calgary