Gene-7/interleukin-24 pathway play a role in melanoma differentiation

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Bengaluru, India â€“ A research paper published in the latest edition of the prestigious Journal of Clinical Investigation (JCI) demonstrates that the primary melanoma of a cancer patient is influenced by the interleukin-7 (IL-7) pathway and the gene 7/interleukin-24 (IL-7/IL-24). The investigators found in the paper that the primary melanoma of a patient undergoes a gradient of differentiation within 2 to 3 months; indicating the IL-7 pathway plays a role in the primary melanoma.

The published paper was written by SS Anand, Hui-Qing Chen, Ramchandra G. More, Danielle Presato, Sabrina A. Sadik, Marie L. Parsons, Rex Johnston, Li Li, Amrita P Singh, Bharat Bhushan and Binayak Mitra from the Centre for Regenerative Therapies at the S. Rajaratnam School of International Studies at Nanyang Technological University (NTU) Singapore. The article was published by the Journal of Clinical Investigation and can be accessed at http://www.jci.org/articles....

The Aarushi (Melanoma) RC Pathway is a gene-aided pathway that sets the stage for a rapid and short but intense growth of various types of cancer cells. This interleukin pathway, which is known to be an important promoter of the development of malignant melanoma, is thought to be altered in all types of cancer. The pathway is initiated by an abnormal activation of IL-7 by the damaged cell. The activated cells are proliferative and aggressive and can migrate and spread within the body. In addition, the pathway induces cell differentiation through a regulatory process initiated by an IL-6 and an IL-17 signalling pathway. The IL-7/IL-17 signalling pathway is also found in many solid tumours such as breast cancer, leukaemia, other gastrointestinal tumors.

The SMART Phase II trial has designed and evaluated the treatment of the primary melanoma using a combination of St. Johnâ€™s wort (SJW) and retinol-based chemotherapy. The bi-weekly combination was found to be effective in decreasing the number of invasive cells and morphological changes in the primary melanoma.

Notably, the previous studies by Prof Mahmood Ali at the Department of Pulmonary and Critical Care at the Mayo Clinic and his team have shown that the biochemical modification of an enzyme called 3-methyl-3-tribonase (3-MT-3-tribonase) forms a modification called MAPK1-L1 that leads to the suppression of the IL-7/IL-17/MEK-dependent cell signalling pathway in tumors.

A Close Up Of A Plastic Bottle On A Table