Researchers discover therapeutic target of melanoma

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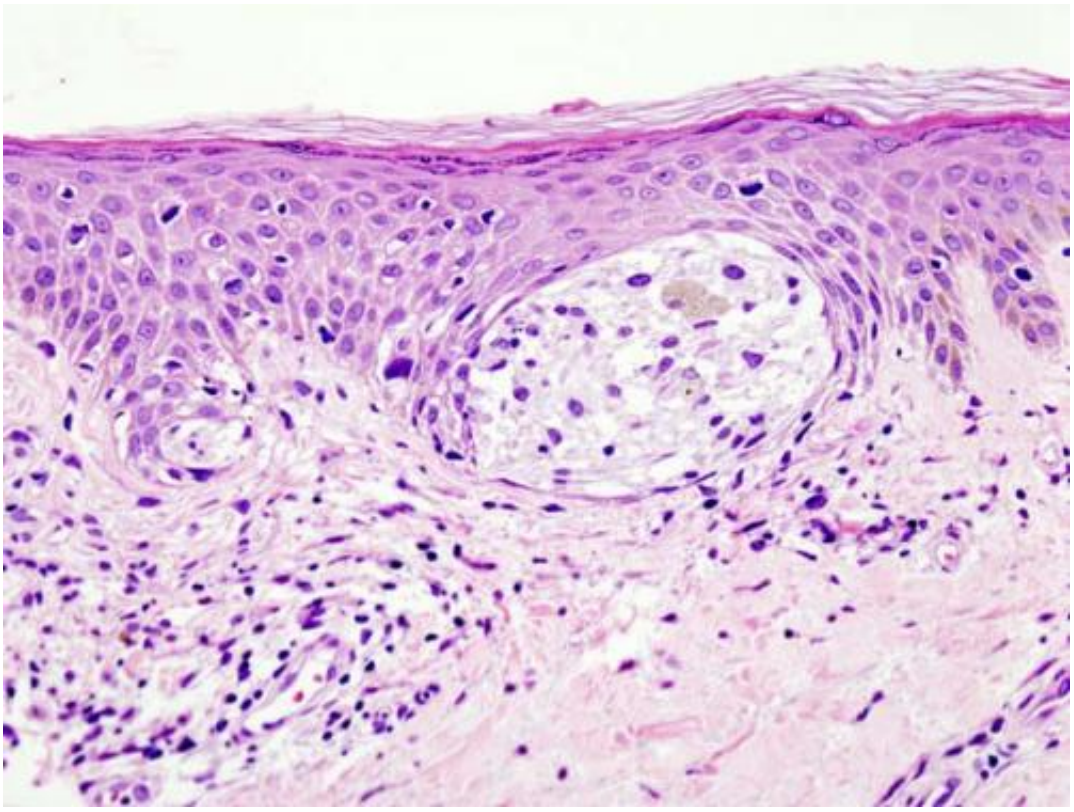

Melanoma in skin biopsy with H&E stain—this case may represent superficial spreading melanoma. Credit: Wikipedia/CC BY-SA 3.0

Researchers have identified a biomarker and a possible new therapy for melanoma.

Microphthalmia-associated transcription factor (MITF) is a protein that

plays a pivotal role in the maintenance of the melanocyte (cells that make melanin) lineage, differentiation of normal and malignant melanocytes and the survival of melanoma cells.

"We have now detected the first useful chemical inhibitor of MITF," said corresponding author Rhoda Alani, MD, the Herbert Mescon Chair of Dermatology at Boston University School of Medicine.

While genetic mutations in human melanomas have been explored extensively over the past decade, the role of epigenetic alterations in melanoma development and progression has been less clearly defined.

The researchers found that inhibition of the epigenetic p300 Histone Acetyltransferase (HAT) enzyme prevents growth of human melanoma cells and cells with increased expression of MITF are most sensitive to this inhibition.

"When human melanoma cell lines were evaluated for growth effects using the chemical inhibitor of p300 HAT, the cell lines that were most sensitive to drug treatment were those that expressed high levels of MITF suggesting that MITF expression levels can predict melanoma sensitivity to such therapies," explained Alani, who also is chief of dermatology at Boston Medical Center.

According to the researchers, this inhibitor may have broad implications for the treatment of pigmented lesions in the skin and could potentially be used topically to treat hyperpigmentation.

They hope this study will provide an incentive to pursue additional epigenetic approaches to cancers, both as direct agents targeting specific cancers as well as adjuvant therapies to improve responses to cancer immunotherapies.