Researchers identify promising therapeutic agent against melanoma

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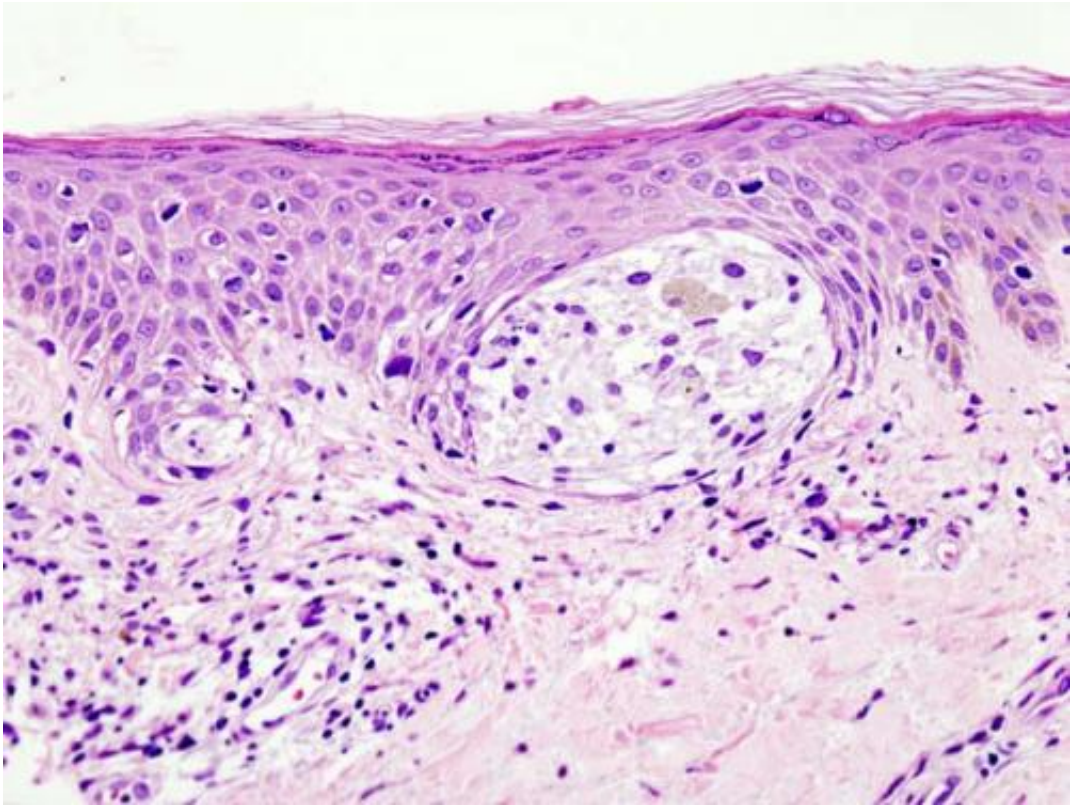

Melanoma in skin biopsy with H&E stain—this case may represent superficial spreading melanoma. Credit: Wikipedia/CC BY-SA 3.0

There have been great advances in treating melanoma over the past five years, however, even with these treatments many patients quickly develop drug resistance and die from their disease. A new study from Boston University School of Medicine (BUSM) has discovered that a

drug (YK-4-279) that was previously created to target one specific type of protein has much broader use against a family of proteins that act to promote melanoma.

"We find that this drug inhibited melanoma from becoming more aggressive in human cells and in experimental models. We also found a specific pathway that this drug acts through to be anti-cancer: inhibiting proteins that drive genes that promote cancer cell growth and metastasis," explained corresponding author Deborah Lang, Ph.D., associate professor of dermatology at BUSM.

Melanoma is an aggressive cancer type, with a high propensity for invasion and metastasis early in the disease process. There are several factors that actively drive melanoma progression including MET, a tyrosine kinase receptor overexpressed in melanoma and implicated in tumor growth, invasion and drug resistance.

Researchers utilized human cells in culture to determine if there were impactful changes on pro-cancer behavior in these cells with or without the drug YK-4-279 and found a significant reduction in growth and movement of the cancer cells when using it. In addition, experimental models treated with the drug had significantly delayed or no progression to aggressive disease.

According to the researchers these findings create the opportunity for YK-4-279 to be an option for melanoma treatments, either singularly or in combination with other available therapeutics. "We find that this molecule disrupts the interaction of two factors known to regulate melanocytes and promote melanoma through gene regulation. This work may impact other systems where these factors play a role, such as in the nervous system and in pigmentary disorders."

More information: Lee Huang et al, Targeting pan-ETS factors

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inhibits melanoma progression, *Cancer Research* (2021). DOI: 10.1158/0008-5472.CAN-19-1668

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