Researchers discover method to 'turn off' mutated melanoma

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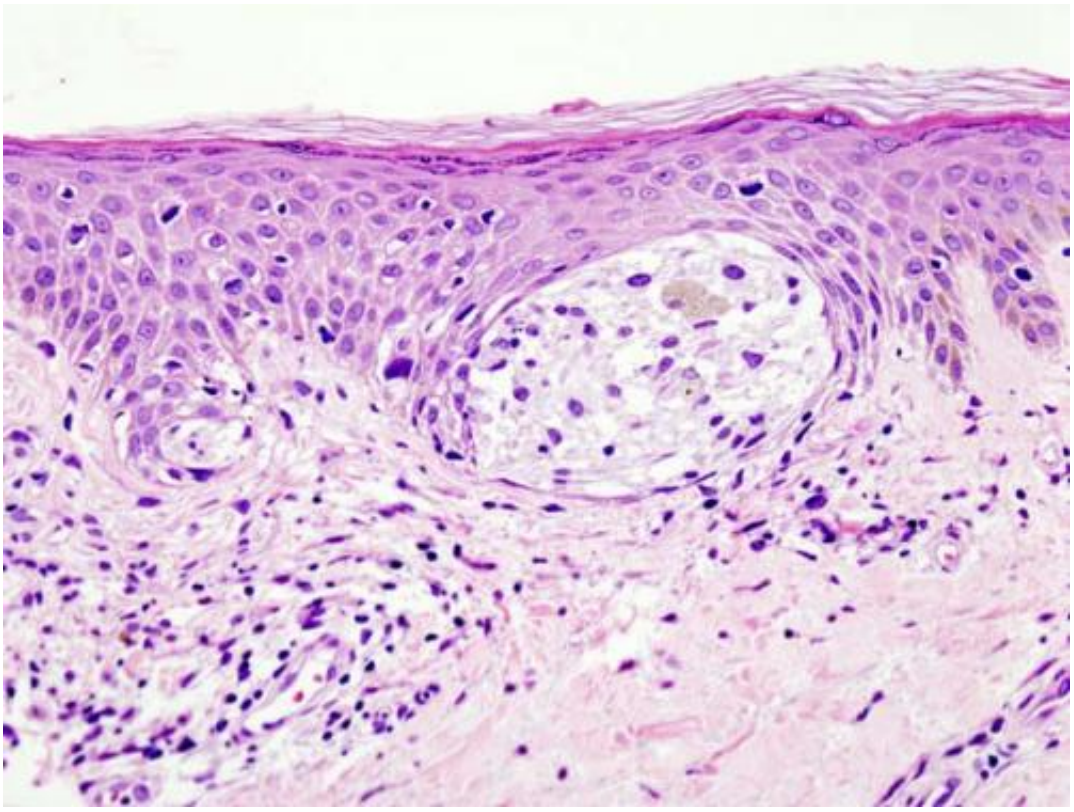

Melanoma in skin biopsy with H&E stain—this case may represent superficial spreading melanoma. Credit: Wikipedia/CC BY-SA 3.0

Melanoma is the deadliest form of skin cancer and notorious for its resistance to conventional chemotherapy. Approximately 25 percent of melanoma is driven by oncogenic mutations in the NRAS gene, making it a very attractive therapeutic target. However, despite decades of

research, no effective therapies targeting NRAS have been forthcoming.

For the first time, an international group of researchers has discovered a novel activator of NRAS and developed a specific inhibitor to effectively prevent NRAS mutant melanoma growth. These findings provide a promising therapeutic option to treat NRAS mutant melanoma.

The researchers first identified STK19 (an enzyme encoded by the STK19 gene) to be a critical regulator of NRAS function. Then they characterized the mechanism by which this activation takes place through biochemical and cellular experiments. Finally, they designed an STK19 inhibitor that efficiently prevented NRAS activation and development of NRAS mutant melanoma in an experimental model.

"This study provides a promising therapeutic strategy for melanoma treatment. Furthermore, the STK19 inhibitor might be a therapeutic option in 25 percent of all cancers with RAS mutations," explained corresponding author Rutao Cui, MD, Ph.D., professor of pharmacology & experimental therapeutics at Boston University School of Medicine. "We hope our findings ultimately will be clinically translated into improved care for cancer patients."

These findings appear in the journal *Cell*.

Provided by Boston University School of Medicine