Mechanism behind compound's effects on skin inflammation and cancer progression

May 23 2011

Charles J. Dimitroff, MS, PhD and colleagues in the Dimitroff Lab at Brigham and Women's Hospital, have developed a fluorinated analog of glucosamine, which, in a recent study, has been shown to block the synthesis of key carbohydrate structures linked to skin inflammation and cancer progression. These findings appear in the April 14, 2011, issue of the *Journal of Biological Chemistry*.

Dr. Dimitroff and colleagues show for the first time that the fluorinated glucosamine therapeutic works not through direct incorporation into growing sugar chains as previously believed but instead blocks the synthesis of a key sugar, UDP-GlcNAc, inside immune cells characteristically involved inflammation and anti-tumor immunity

Accordingly, this report underscores a novel and previously unknown mechanism by which fluorinated glucosamine analogs could shape and reduce inflammation intensity, while boosting anti-tumor immune responses. Such knowledge could prove valuable in the design of new and more potent glucosamine mimetics against disease as well as in treatment strategies to utilize existing glucosamine mimetics more efficiently.

Provided by Brigham and Women's Hospital

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