CORRESPONDENCE

Re: The Role of STAT-3 in the Induction of Apoptosis in Pancreatic Cancer Cells by Benzyl Isothiocyanate

The article by Sahu and Srivastava (1), which outlines some elegant studies on the mechanism of action of benzyl isothiocyanate (BITC), “a compound found in cruciferous vegetables,” is unfortunately based on a fundamental error. The authors seek to justify their work on the grounds that various studies have indicated that the isothiocyanates present in cruciferous vegetables may have substantial chemopreventive activity. This may indeed be the case, and one of the articles cited (2) indeed identifies a major inducer of anticarcinogenic protective enzymes from broccoli. Unfortunately, this chemical was identified as (−)-1-isothiocyanato-(4R)-(methylsulfinyl)butane and not BITC (2). This and other studies would suggest that the nature of the isothiocyanate is important in terms of biological activity and that a chemopreventive effect from cruciferous vegetables can only be associated with isothiocyanates that are actually present in these foods. Unfortunately, BITC is almost completely absent in the list of cruciferous vegetables that the authors refer to and is only found in reasonable amounts in garden cress (Lepidium sativum). A recent study identified excretion levels of isothiocyanate mercapturic acids in men fed 19 different cruciferous vegetables and confirmed that only garden cress contained measurable amounts of BITC (3). Although it is possible that other isothiocyanates that are present in cruciferous vegetables operate by a similar mechanism, this is simply not known. For this reason, any justification for this study based upon the normal human diet is incorrect and unable to be substantiated. The relevance of any studies into BITC in the context of human diet is therefore questionable.

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References


Notes

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