

Is there any association between COX2 and colon cancer?

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Non-steroidal anti-inflammatory drugs (NSAIDs), which are known to reduce the risk of colon cancer, act directly on cyclooxygenase-2 (COX2) and reduce its activity. Population studies have found an association of inherited variations in the COX2 gene with colon cancer risk, but others were unable to replicate this finding. Similarly, variations in the uridine diphosphate glucuronosyltransferase 1A6 (UGT1A6) gene, which is also known to be key in the metabolism of NSAIDs, have been shown to modify the effect of NSAIDs on developing colon polyps, a precursor of colon cancer, but these modifications of NSAID effects have not been observed in risk of colon cancer.

A research article to be published on May 14, 2009 in the *World Journal of Gastroenterology* addresses this question. The research team led by Dr. Li from Case Western Reserve University examined the association of variants of the COX2 and UGT1A6 [genes](#), and their interaction with NSAID consumption, on risk of [colon cancer](#) in attempt to more fully understand the relationship between genetic variation and the protective effect of NSAIDs on colon cancer risk.

They found that no single [nucleotide polymorphisms](#) (SNPs) in either gene were individually statistically significantly associated with colon cancer, nor did they statistically significantly change the protective effect of NSAID consumption. Like others, the authors were unable to replicate the association of variants in the COX2 gene with colon cancer risk ($P > 0.05$), and they did not observe that these variants modify the protective effect of NSAIDs ($P > 0.05$). Their study does not support a

role of COX2 and UGT1A6 genetic variations in the development of colon cancer.

More information: Thompson CL, Plummer SJ, Merkulova A, Cheng I, Tucker TC, Casey G, Li L. No association between cyclooxygenase-2 and uridine diphosphate glucuronosyltransferase 1A6 genetic polymorphisms and colon cancer risk. *World J Gastroenterol* 2009; 15(18): 2240-2244 www.wjgnet.com/1007-9327/15/2240.asp

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