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INFLAMMATION-ASSOCIATED CARCINOGENESIS AND ITS CHEMOPREVENTIONYoung-Joon Surh*National Research Laboratory of Molecular Carcinogenesis and Chemoprevention, College of Pharmacy, Seoul National University, Seoul 151-742, Korea*

Multiple lines of compelling evidence from clinical, epidemiologic and laboratory studies support that inflammation plays a critical role in the promotion and progression stages of carcinogenesis. Recent progress in our understanding of molecular biology of cancer highlights the intracellular signal transduction network, including that involved in mediating inflammatory response, which often functions abnormally during carcinogenesis. One of the key players in the inflammatory signaling is cyclooxygenase-2 (COX-2). Aberrant upregulation of COX-2 has been frequently observed in various pre-cancerous and malignant tissues. Therefore, the normalization of inappropriately overamplified signaling cascades implicated in chronic inflammation-associated carcinogenesis by use of COX-2 specific inhibitors has been recognized as a rational and pragmatic strategy in molecular target-based chemoprevention. As part of our research program, we have explored the chemopreventive effects of some anti-inflammatory phytochemicals derived from edible plants, and their underlying molecular mechanisms. This presentation will mainly focus redox-sensitive transcription factors, such as NF-kappaB, AP-1 and Nrf2, as prime targets of these natural COX-2 inhibitory substances.

Key Words: Chemoprevention, Cyclooxygenase-2, Inflammation, Phytochemicals