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Isolation and Identification of compounds from the Stem Bark of *Sorbus commixta* Hedl.

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Sorbus commixta Hedlund (Rosaceae) is a shrub growing in the base of mountainous regions and usually grows 6-8 m in height. The stem bark of *S. commixta* is used in traditional medicine as a tonic and for the treatment of cough, asthma and other bronchial disorders. Recently, there has been hardly systematic study on their chemical constituents and biological activity. Thus, there has been considerable interested in phytochemical investigations of *S. commixta*. The stem bark of *S. commixta* were extracted with 95% MeOH, and the concentrated extract was partitioned with $CHCl_3$, n-BuOH and H_2O. From the $CHCl_3$ fraction, four known compounds (1-4) were isolated through the repeated silica gel and ODS column chromatographies. Their structure were identified as lupeol (1), β-sitosterol (2), ursolic acid (3), scopoletin (4) by NMR spectroscopy and analysis of spectral data. Among them, scopoletin (4) was isolated from this plant for the first time.

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Analysis of differentially expressed genes by resveratrol in human colorectal HCT116 cells

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In the present study, we investigated whether several phytochemicals (resveratrol, genistein, epicatechin gallate, dially disulfide, caffeic acid phenetyl ester) and sulindac sulfide could induce tumor suppressor gene p53 in human colorectal HCT116 cells. We found that p53 was dramatically induced by all phytochemical treatments, however NSAID sulindac sulfide could not induce p53 expression. Among treated phytochemicals, we selected resveratrol for further experiments because it is one of the highest p53 inducer. Using a Western blot analysis, we found that resveratrol induced p53 in a dose- and time-dependent manner. Additionally, using membrane-based microarray analysis, we found that twenty-five genes were up-regulated and two genes were down-regulated in response to resveratrol treatment. For the commonly up-regulated genes, the microarray analysis was confirmed by reverse-transcription-PCR using gene-specific primers. In addition, we found that *thrombospondin-1* expression was not dependent on p53 presence, whereas *maspin* expression was dependent on p53 by resveratrol treatment. The results of this study may help to increase our understanding of the molecular mechanisms of chemoprevention that are mediated by resveratrol in human colorectal cancer.

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