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Inhibitory Effects of Oriental Medicinal Herbs on Enzymatic Activity of Sialyltransferases (ST3Gal I and ST6Gal I) Associated with Cancer

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In many cases of human cancer, the appearance of hypersialylated glycan structures is related to a precise stage of the disease; this may depend on the elevated sialyltransferase activity during carcinogenesis. The aim of this study was to investigate the inhibitory effects of Oriental medicinal herbs on enzymatic activities of two kinds of sialyltransferase, Gal β 1,3GalNAc α 2,3-sialyltransferase (ST3Gal I) and Gal β 1,4GlcNAc α 2,6-sialyltransferase (ST6Gal I), which are well known as glycosyltransferases associated with cancer. The aqueous extracts of *Scutellaria baicalensis* Georgi, *Coptidis Rhizoma*, *Glycyrrhiza uralensis* Fisch, *Bupleuri Radix* and *Platycodi Radix* were prepared and tested, respectively. At concentration of 100 μ g, *Glycyrrhiza uralensis* Fisch showed the highest inhibitory effects (about 42 % and 57 %, respectively) on ST3Gal I and ST6Gal I activities. ST3Gal I was inhibited about 23 % by *Scutellaria baicalensis* Georgi, but not by the other samples, whereas ST6Gal I was inhibited about 20 % and 40 %, respectively, by *Scutellaria baicalensis* Georgi and *Bupleuri Radix*. All inhibitory effects were obtained in a concentration-dependent manner.