

Studies on Antioxidative Properties of the Extracts from Raphanus Sativs L., Sinapis Alba L. and Rorippa India L. Hiern

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ABSTRACT

Raphanus Sativs L., Sinapis Alba L. and Rorippa India L. Hiern are all belong to Cruciferous genus Chinese medicine herbs。 There are a lot of studies on these seeds relating to the improvement of functions of digestion system and respiration system. Some studies shows that Raphanus Sativs L. can effectively reduce the blood pressure and against bacteria. Sinapis Alba L. has characters of anti-cancer and stimulation of immunity. Rorippa India L. Hiern has beneficial effects on the circulation system via reducing blood lipids and diuretic effect. However, there is no systematic study focusing on the anti-oxidation, anti-cancer and immunostimulating effects of these seeds. After extracting by various solvents, we compared the anti-oxidation effects of the extracts of three tested seeds, including measured the contents of polyphenols, the total antioxidant capacity, the reducing activity, the scavenging activity on DPPH radical and the lag time of LDL oxidation. We also compared the inhibitory abilities of these seeds extracts on the growth of human gastric cancer AGS cells and the stimulating abilities of immunity of MNC cells. Immunostimulating effects were monitoring by the secretion of immunomodulatory hormones of TNF- and IL-1, the generation of NO and the expression levels of COX-2. We found that the methanol extract of Raphanus Sativs L. has the best ability in anti-oxidation. We also found that the methanol extracts of Raphanus Sativs L. possessed the best activity to inhibit the growth of AGC cancer cells. The methanol extracts of Raphanus Sativs L. also showed with the highest immunomodulating activity. These results revealed the potential of the methanol extracts of Raphanus Sativs L. to be utilized in functional Chinese medicine herbs.

Keywords : Raphanus Sativs L.、 Sinapis Alba L.、 Rorippa India L. Hiern、 Antioxidantpropertes、 Anticancer effects、 immunomodulating activity

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