



Polyphenolic Profiles and Antioxidant Activities of *Smilax glabra* Roxb. and *S. china* L.

Huirong ZHANG¹, Li LI^{1*}, Bo LI¹, Anqi ZHAO¹ & Rong TSAO^{2*}

¹ The College of Chemistry, Changchun Normal University, China, Changchun, 130032

² Guelph Food Research Centre, Agriculture and Agri-Food Canada,
93 Stone Road West, Guelph, Ontario, Canada N1G 5C9

SUMMARY. *Smilax glabra* Roxb. and *S. china* L. are widely consumed by Chinese as functional foods and in folk medicine for their medicinal properties. The present study by liquid chromatography-electrospray ionization-mass spectrometry revealed that the major polyphenolics in *S. china* were astilbin, isoastilbin, engelitin, isoengelitin and resveratrol, which were similar to those in *S. glabra*, however the total and individual concentrations in general were higher in *S. china* L. except isoastilbin. The total phenolic content (TPC) of *S. china* was nearly twice as high as that of *S. glabra*. Extract of *S. china* also showed significantly stronger antioxidant activities as measured by the DPPH and ABTS methods (3 and 8 fold, respectively). The strong antioxidant activities of *S. china* and *S. glabra* extracts and the individual flavones isolated from these two *Smilax* species suggest that the flavones are the major antioxidant components. Higher TPC and stronger antioxidant activities of *S. china* L. extract also suggest the existence of additional polyphenolic antioxidants, such as resveratrol. The present finding helps further development of *S. china* L. based functional foods and herbal supplements.

KEY WORDS: Antioxidant activities, LC-ESI-MS^{SP}, Polyphenolic, *Smilax glabra*, *S. china*.

* Author to whom correspondence should be addressed. E-mail: lilchem@163.com and Rong.Cao@agr.gc.ca