**The protocol for large-scale purification and antitumor effect of flavonoids: The study of *Daphne genkwa***

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**Abstract**

*Daphne genkwa* (Yuanhua in Chinese), a medicinal plant apparently widespread in the Yangtze and Yellow River basins of China, has traditionally been used as an anti-inflammation, analgesic, sedative, and antitussive agent. The three primary flavonoids found in the flower are apigenin, genkwanin, and 3-hydroxy-genkwanin, which have antitussive properties. Despite the fact that the three compounds were separated from *D. genkwa* using some traditional techniques that were tedious, time consuming, and inefficient, macroporous resin (MR) column chromatography and counter-current chromatography (CCC) have been widely used in application for large-scale preparative separation*.* On the other side, the plant's root has been utilized as a successful treatment for a variety of tumors. Daphnodorins and total flavonoids of *D. genkwa* root (TFDR) were shown to be responsible for the prevention of tumor development and metastasis in mice with Lewis lung carcinoma during the screening for antitumor components. As a result, the goal of this study is to not only establish a simple and efficient method for large-scale purification of three major flavonoids from the flower of *D. genkwa* using a combination of MR column chromatography and CCC, but also to investigate the effects of six daphnodorins and TFDR against the proliferation of various tumor cell lines in vitro and tumor growth in tumor-bearing mice.

**Keywords:** *Daphne genkwa*,MR column chromatography, counter-current chromatography, daphnodorins, flavonoids, Lewis lung carcinoma.

**Reference**

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