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In vitro antioxidant activity and potential inhibitory action against α-glucosidase of polysaccharides from fruit peel of tea (*Camellia sinensis L.*)

茶果皮多糖理化性质、体外抗氧化活性及对α-葡萄糖苷酶的抑制作用

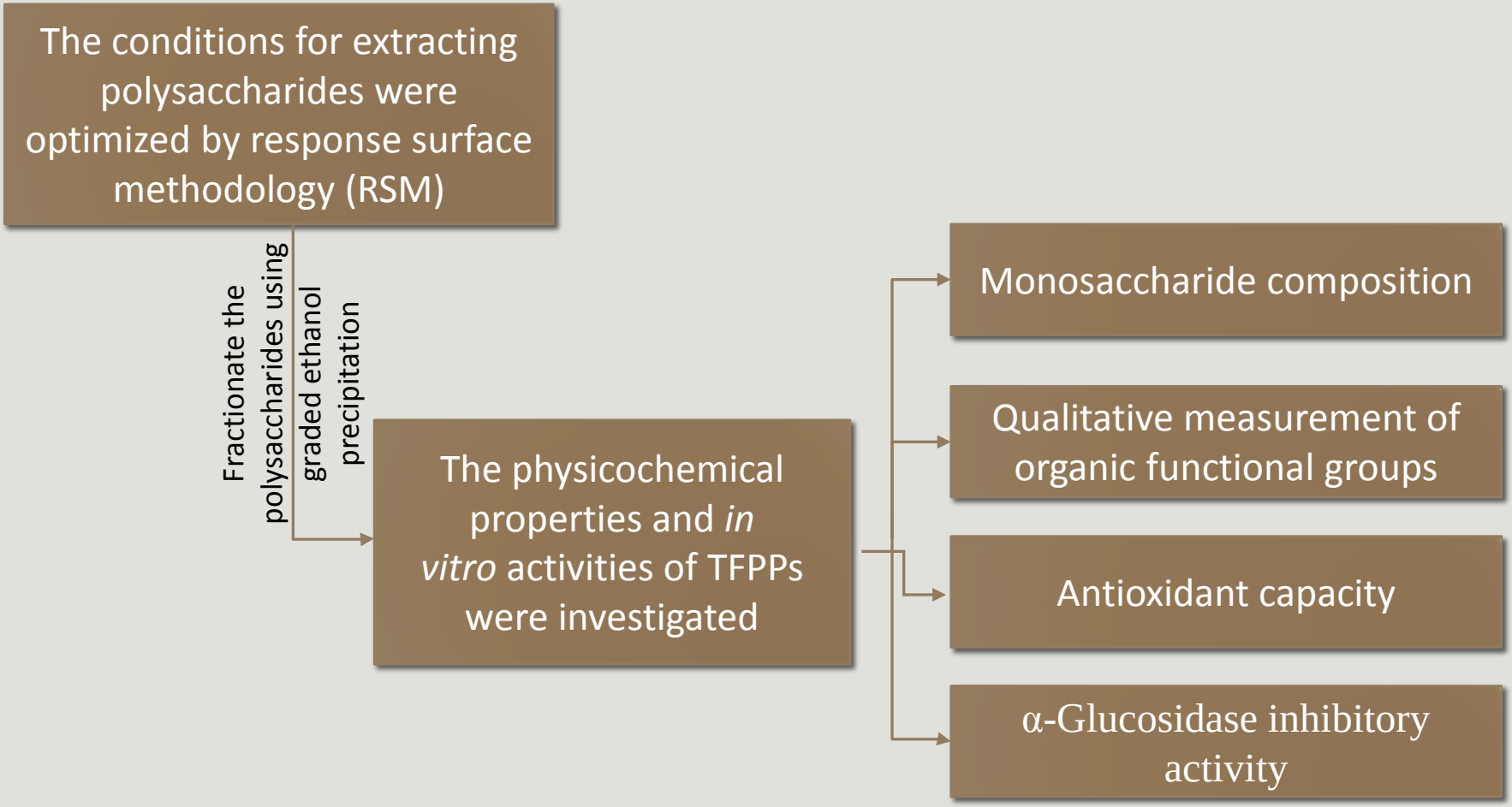
Key words: Polysaccharides, Tea (*Camellia sinensis* L.) fruit peel, Physicochemical properties, Antioxidant activity, α-Glucosidase inhibition

关键词：茶果皮；多糖；响应面；抗氧化；α-葡萄糖苷酶抑制

- The maximum yield (4.98%) of polysaccharides from tea (*Camellia sinensis* L.) fruit peel (TFPPs) were achieved under the conditions of 20 v/w, 90 min and 70 ℃ for liquid/solid ratio, extraction time and extraction temperature, respectively.

- The TFPPs had not only remarkable scavenging activity on 2,2'-azinobis (3-ethylbenzothiazoline-6-sulfonic acid) diammonium salt (ABTS) and reducing activity on the ferric-reducing antioxidant power (FRAP), but also excellent inhibitory potential against α-glucosidase *in vitro*.

- The results indicated that TFPPs could act as both antioxidants and α-glucosidase inhibitors, and have potential to be used in the prevention of type 2 DM. Meanwhile, tea fruit peel could be treated as a potential bioresource for the development of polysaccharide antioxidants.


The conditions for extracting polysaccharides were optimized by response surface methodology (RSM)
Fractionate the polysaccharides using graded ethanol precipitation
The physicochemical properties and *in vitro* activities of TFPPs were investigated
Monosaccharide composition
Qualitative measurement of organic functional groups
Antioxidant capacity
α-Glucosidase inhibitory activity