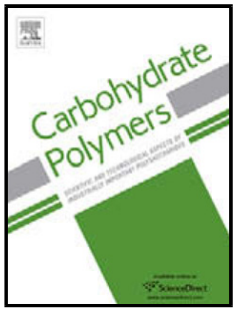

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Structure Features and *in vitro* Hypoglycemic Activities of Polysaccharides from Different Species of *Maidong*

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Highlights

1. Polysaccharides LSP, LMP and OJP were isolated from three species of *Maidong.*

2. The structure features of LSP, LMP and OJP were elucidated and compared.

3. LSP, LMP and OJP possess high hypoglycemic activities *in vitro*.

4. LSP, LMP and OJP could improve insulin resistant through PI3K/AKT pathway in IR HepG2 cells.

5. LSP, LMP and OJP could be potential anti-diabetic polysaccharides.

Abstract：Structures and *in vitro* hypoglycemic activities of polysaccharides from different species of *Maidong* were studied. The primary structures of polysaccharides were elucidated on the basis of GC, GC-MS, infrared, NMR and periodate oxidation-Smith degradation. *Liriope spicata* polysaccharide (LSP), *Ophiopogon japonicus* polysaccharide (OJP) and *Liriope muscari* polysaccharide (LMP) were composed of *β*-fructose and *α*-glucose. The average molecular weights of LSP, OJP and LMP were 4742, 4925 and 4138 Da with polydispersity indexes of 1.1, 1.2 and 1.1, respectively. The backbones of polysaccharides were formed by Fruf-(2→,