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# Structure elucidation and immunological activity of a novel glycopeptide from mannatide

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## Research highlights:

- A novel water-eluted glycopeptide was obtained from mannatide.
- Structure of polysaccharide moiety of the glycopeptide was determined.
- The immunological activity of glycopeptides was compared.

**Abstract:** A water-soluble glycopeptide, designated as MTW, was isolated and purified from crude mannatide by DEAE-Sepharose. MTW showed one symmetrical peak on HPGPC with an average molecular weight of  $2.95 \times 10^4$  Da. MTW contained 16 kinds of amino acids and the total amino acid content was 0.95%. The structure of polysaccharide moiety of MTW was elucidated based on monosaccharide composition, methylation analysis, partial acid hydrolysis, IR and 1D/2D NMR spectroscopy. The results showed that MTW was a homogeneous glycopeptide including mannose and glucose with a molar ratio of 2:1. The polysaccharide moiety of MTW had a backbone of (1→6)- $\alpha$ -D-Man<sub>p</sub> residues, which highly branched at O-2 position of (1→2,6)- $\alpha$ -D-Man<sub>p</sub> residues. The side chains were mainly composed of (1→)- $\alpha$ -D-Man<sub>p</sub>, (1→2)- $\alpha$ -D-Man<sub>p</sub>, (1→4)- $\alpha$ -D-Glc<sub>p</sub>, (1→4,6)- $\alpha$ -D-Glc<sub>p</sub> residues.

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