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THE *N*-GLYCOME OF *ASHBYA GOSSYPII*'S NATIVE SECRETED PROTEINS

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ABSTRACT

Within the framework of a project aimed at analysing the basis of *Ashbya gossypii* protein secretory capabilities, we focused our attention on the processing of glycoproteins. Complex carbohydrate structures, glycans, are essential components of glycoproteins, contributing to the functional conformation and to the selection of the final destination of these proteins. Presently, the glycosylation pattern and degree of glycosylation performed by *A. gossypii* remains unexplored. In this study, using MALDI-TOF mass spectrometric profiling, we have examined the *N*-glycans present in *A. gossypii*'s native glycoproteins secreted under different culture conditions. *N*-glycan profiling revealed that the major glycan species derived from *A. gossypii*'s secreted proteins are small glycans containing core-type structures with eight to eleven hexoses (H8±11N2). Growth in defined minimal medium also resulted in charged glycan structures that were slightly bigger and were either phosphorylated or sulphated (H13±15N2P/S). In contrast, no charged glycans could be detected when complex rich medium was used. Some signals detected in the spectra may correspond to more complex *N*-glycans structures containing fucose, phosphate and pentose residues. Understanding *A. gossypii*'s glycobiology offers a basis for future studies of its protein secretion processes and may possibly be of practical impact in the production of heterologous proteins.

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