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LECTIN-BASED MICROARRAY AND MALDI-TOF-MS APPROACHES IN STUDY OF GLYCAN CHANGES IN ADHD

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Attention-deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder. Glycomic analysis is important in terms of the development of new approaches for research, diagnosis and therapy of many disorders including neurodevelopmental ones. We compared the glycan profile of serum samples from children patients with ADHD (n = 10) and the control group (n = 10) in 3 types of samples: whole serum samples, sera after depletion of abundant serum proteins (albumin and IgG), and IgG. Lectin-based protein microarray enables high-throughput glycoprofiling of samples containing glycoproteins. The samples were printed onto microarray slides, incubated with biotinylated lectins and the detection was performed by fluorescent conjugate of streptavidin. Mass spectrometry (MS) was used as a standard method for glycomic analysis. Conclusions drawn from the analysis of both methods are mutually consistent and coincide with the conclusion of the work (1) devoted to similar topic. This work outlines new approach for ADHD research enabling high-throughput screening of potential biomarkers.

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Reference:

1. Pivac, N., et al., *Mol. Cell. Proteomics*, **2011**, *10*, M110.004200.