

[Clin. Chem., 36, 1967 (1990)]

Enzyme Immunoassay for Measuring Antibodies against Skeletal Muscle in Patients with Myasthenia Gravis.

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We developed a highly sensitive enzyme immunoassay (EIA) for measuring IgG and IgM antibodies against human skeletal muscle (SM) component and tested sera from 100 patients with myasthenia gravis (MG), 59 with thymoma and 41 without thymoma. We found that the frequency of anti-SM IgG antibodies was significantly higher in MG patients with (81%) than without (37%) thymoma. The titers of the anti-SM IgG antibodies measured by EIA correlated well with those measured by RIA ($r=0.81$, $p<0.01$). We also found that 12% of the myasthenic patients with thymoma and 15% without it had anti-SM antibodies. There was no correlation between the titers of the IgG and IgM antibodies.

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Anti-skeletal Muscle Antibodies in the Sera from Myasthenic Patients with Thymoma: Identification of Anti-Myosin, Actomyosin, Actin, and α -Actinin Antibodies by a Solid-phase Radioimmunoassay and a Western Blotting Analysis.

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We developed a solid-phase radioimmunoassay (RIA) using purified muscle antigens and Western blotting analysis in MG sera with high titers of anti-SM antibodies. Our results showed that MG patients with thymoma had markedly high titers of anti-myosin and anti-actomyosin antibodies than those without thymoma. Furthermore, a close correlation was found between titers of anti-SM, anti-myosin and anti-actomyosin antibodies. The antibody titers against actin, α -actinin and tropomyosin were all low and did not correlate with titers of anti-SM antibodies.

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Antibodies to Synthetic Peptide (125-148) of the α -Subunit of Human Nicotinic Acetylcholine Receptor in Sera from Patients with Myasthenia Gravis.

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We measured the amount of antibodies to a synthetic peptide that corresponds to the α -subunit residues Lys¹²⁵-Thr¹⁴⁸ of human acetylcholine receptor (AChR) in myasthenic sera. We detected anti-peptide antibodies in 52% (89/171) of the patients with myasthenia gravis (MG), but none in any of the healthy controls. Anti-peptide antibodies should provide a valuable immunologic parameter for the clinical evaluation of MG, but no apparent correlation was observed between the titers of anti-peptide and anti-AChR antibodies. The pathogenic significance of these antibodies has now to be clarified by the use of various synthetic peptides and their antibodies.