Lab Dept:	**Serology**
Test Name:	**ACETYLCHOLINE RECEPTOR (MUSLCE AChR) BINDING ANTIBODY**

General Information

Lab Order Codes:	ABIN
Synonyms:	Acetylcholine Receptor (AChR) Antibodies, Serum; ACh Receptor (Muscle) Binding Ab; AChR; Myasthenia Gravis Ab
CPT Codes:	83519 – Immunoassay, analyte, quantitative; by radiopharmaceutical technique (eg, RIA)
Test Includes:	AChR Binding Antibody reported in nmol/L.

Logistics

Test Indications:	This is the primary diagnostic test for myasthenia gravis.
Lab Testing Sections:	Serology - Sendouts
Referred to:	Mayo Clinic Laboratories (MML Test: ARBI)
Phone Numbers:	MIN: 612-813-6280
	STP: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	4 – 6 days – test is set up Sunday - Friday
Special Instructions:	Sera will be kept for one month

Specimen

Specimen Type:	Blood
Container:	SST (Gold, marble or red)
Draw Volume:	3 mL blood
Processed Volume:	1 mL serum
Collection:	Routine blood collection

Special Processing:	Lab Staff: Centrifuge specimen, remove serum aliquot into screw-capped round bottom plastic vial. Store and ship at refrigerated temperatures. Forward promptly.
Patient Preparation:	None
Sample Rejection:	N/A

Interpretive

Reference Range: <0.02 nmol/L

Interpretation: Values above 0.02 nmol/L are consistent with the diagnosis of acquired MG, provided that clinical and electrophysiological criteria support that diagnosis.

The assay for muscle AChR binding antibodies is positive in approximately 90% of nonimmunosuppressed patients with generalized MG.

The frequency of antibody detection is lower in MG patients with weakness clinically restricted to ocular muscles (71%) and antibody titers are generally low in ocular MG (eg, 0.03 – 1.0 nmol/L).

Results may be negative in the first 12 months after symptoms of MG appear or during immunosuppressant therapy. Note: in follow-up of seronegative patients with adult-acquired generalized MG, 17.4% seroconvert to positive at 12 months (ie, seronegativity rate at 12 months is 8.4%). Of persistently seronegative patients, 38% have muscle-specific kinase (MuSK) antibody.

In general, there is not a close correlation between antibody titer and severity of weakness, but in individual patients, clinical improvement is usually accompanied by decrease in titer.

Critical Values: N/A

Limitations: Positive results for AChR Binding or striational antibodies are found in 13% of patients with Lambert-Eaton myasthenic syndrome (LES). This does not mean that MG and LES coexist. Antibodies to P/Q type calcium channels are found in 95% of LES patients, but not in MG, except in very rare paraneoplastic cases relatated to small-cell lung carcinoma.

Positive results are frequently found with autoimmune liver disease.

Magnitude of the result is not useful for predicting severity of MG.

The presence of alpha-bungarotoxin antibodies may interfere with this assay.

Methodology: Radioimmunoassay (RIA)

References: Mayo Clinic Laboratories September 2019