

Voltage-Gated Calcium Channel Autoantibody (VGCCAb)

RADIOIMMUNOASSAY

NEUROIMMUNOLOGY

ASSAY CHARACTERISTICS

Semi-Quantitative

Controls (Included): 1 Positive, 1 Negative

TOTAL RUNNING TIME

2 Hours and 40 Minutes

SPECIMEN MATRIX

Human Serum

REFERENCE RANGE

Normal Individuals: ≤ 30 pmol/L

PRECISION

Intra-Assay Dose (pmol/L)	% CV	Inter-Assay Dose (pmol/L)	% CV
31.0	14.9	31.3	16.9
62.1	15.5	60.8	14.3
145	6.9	142	14.6

PATIENT GROUP NUMBER OF PATIENTS POSITIVE FOR VGCCAB %

LEMS	50/50	100%
Hashimoto's Thyroiditis	0/11	0%
Myasthenia Gravis	0/32	0%
Polymyalgia Rheumatica	0/5	0%
Chronic Fatigue Syndrome	0/10	0%
Neuropathy	0/5	0%
Polymyositis	0/3	0%
Small Cell Lung Cancer	0/3	0%
Guillain-Barre	0/1	0%
Healthy Blood Donors	0/160	0%

CLINICAL SENSITIVITY & SPECIFICITY

Sensitivity:	100%
Specificity:	100%

The KRONUS Voltage-Gated Calcium Channel Autoantibody (VGCCAb) RIA Assay Kit is for the semi-quantitative determination of antibodies to voltage-gated calcium channels in human serum. The VGCC antibody may be present in patients diagnosed with Lambert-Eaton Myasthenic Syndrome (LEMS).

Lambert-Eaton myasthenic syndrome (LEMS) is a disorder of neuromuscular transmission caused by antibodies that impair the presynaptic release of acetylcholine. The release of acetylcholine is regulated by the influx of calcium through voltage-gated channels (VGCC) in nerve terminals. Pathogenic autoantibodies directed against these calcium channels are thought to reduce calcium influx and inhibit acetylcholine release. The impairment of acetylcholine release results in fatiguability and muscle weakness that is characteristic of the disease. To date, several subtypes of calcium channels have been described based on biophysical and pharmacological properties. Of these, P/Q subtypes are thought to be the most significant in LEMS.

Classical symptoms of LEMS include proximal muscle weakness, fatiguability, dry mouth and impotence. When presentation is further complicated with oculobulbar weakness, these symptoms can be easily misinterpreted as myasthenia gravis (MG). However, because VGCC antibodies are positive in only approximately 5% of MG patients, in comparison to approximately 95% of LEMS patients, the measurement of these antibodies is very useful in distinguishing LEMS from MG.



ORDERING INFORMATION

KR6560 – 12 Tube Kit
KR6565 – 24 Tube Kit

For In Vitro Diagnostic Use



ASSAY PROCEDURE

Sample Volume: 25µL per Tube

Positive Control, Diluted Negative Control and Samples: 25 µL
*For Both Total Binding (TB) and Non-Specific Binding (NSB) VGCC Preparations

¹²⁵I VGCC Tracer & NSB Reagent into Tubes: 50 µL
Gently Vortex Tubes
1 Hour Incubation at Room Temperature

Anti-Human IgG: 125 µL
Gently Vortex Tubes
1 Hour Incubation at Room Temperature

Washing Solution: 1 mL [Repeat]
Gently Vortex Tubes
Centrifuge Tubes for 20 Minutes at 4° C

Decant and Drain:
Count Radioactivity of Pellets for 2 Minutes

Total Assay Time is Approximately 2 Hours and 40 Minutes

REFERENCES

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