**Description:** Enzyme linked immunosorbent assay (ELISA) kit for the quantitative determination of autoantibodies to aquaporin-4 (AQP4) in serum.

**Disease application:** Neuromyelitis Optica (NMO), also known as Devic’s syndrome, or NMO spectrum disorder (NMOSD).

**Test samples:** Sera can be used. Do not use lipaemic or haemolysed samples. Some EDTA plasma samples may show approximately ±30% of results obtained with corresponding serum samples (see IFU). No interference was observed; haemoglobin <500 mg/dL, bilirubin <20 mg/dL and intralipid <3,000 mg/dL.

**Assay volume:** 50µL per well

**Total assay time:** Approx. 3 hours

**Assay method:**

Calibs, controls, samples into wells + AQP4 biotin

2 hrs incubation

3 x wash, add SA-POD

20 min incubation

3 x wash, add substrate

20 min incubation

Stop reaction

+ read

**Sensitivity:** 77 % n = 62 for NMO or NMOSD patients positive for NMO IgG immunofluorescence test

**Specificity:** 99 % n = 358 for healthy blood donors

**Calibrator range:** 1.5 – 80 units/mL (arbitrary RSR units)

**Cut-off:** Negative: < 3 unit/mL; Positive: ≥ 3 unit/mL

**Lower detection limit:** 0.17 units/mL (mean + 2 standard deviations in assay of negative control; n = 20)

**Advantages:** A non-isotopic method with easy assay format for use in routine clinical laboratories and suitable for automated systems.

**Features:** Reliable and convenient method to measure AQP4 autoantibodies, which are a specific marker for NMO or NMOSD. Measurement of AQP4 autoantibodies can be of considerable value in distinguishing NMO and/or NMOSD from Multiple Sclerosis when full clinical features may not be apparent and early intervention may prevent or delay disability.

**Improvement:** Sensitivity has been improved without any loss in specificity using M23-AQP4 rather than M1 (compared with ElisaRSR™ AQP4 Ab).

**Kit size:** 96 wells

**Order code:** AQP4/96/2

**Literature:**

V A Lennon et al, Lancet 2004 364 (9451): 2106-2112
A serum autoantibody marker of neuromyelitis optica: distinction from multiple sclerosis

IgG marker of optic-spinal multiple sclerosis binds to the aquaporin-4 water channel

Neuromyelitis optica IgG predicts relapse after longitudinally extensive transverse myelitis

N Isobe et al, Multiple Sclerosis Journal 2012 18:1541-1551
Quantitative assays for anti-aquaporin-4 antibody with subclass analysis in neuromyelitis optica

S Jarius et al, J of the Neurological Sciences 2012 320: 32-37
Testing for antibodies to human aquaporin-4 by ELISA: Sensitivity, specificity and direct comparison with immunohistochemistry.