Ganglioside antibodies

General:

Gangliosides belong to the group of sphingolipids which derive from Nacylated derivates of the C18-aminoalcohols sphingosine and dihydrosphingosine, the ceramides. Gangliosides are acidic, sialacid (Nacetylneuraminic acid, new5Ac) containing ceramide-polysaccharides with one up to five carbohydrates of which at least one is N-acetylneuraminic acid.

The nomenclature of the gangliosides describes the molecular structure of their carbohydrate chain. The prefix G describes the ganglioside, M, D, T and Q refer to the number of the new5Ac (M=monosialo, D=disialo, T=trisialo, Q=quadrosialo). The digits and letters indicate thin-layerchromatographic chracteristics.

Gangliosides are found in the membranes of neurons, especially at the synapses and in the myelin sheaths. They influence and route the celldifferentiation, synaptogenesis, synaptic transmission and the development of axons. In neuropathologic syndromes the ganglioside-autoantibodies target the carbohydrate-fraction of the gangliosides.

The monosialo ganglioside GM1 represents the major fraction of the gangliosides in the myelin of peripheral nerves. It appears in the myelin of motor and sensory nerves, in the membranes of neurons in the spinalganglion and bone-marrow. It anchors the myelin-basic glycoprotein in the myelin-membranes of the peripheral and central nervous-system and is therefore important for the formation and preservation of myelin-containing axons.

Occurrence: Autoantibodies against gangliosides can occur in certain acute or chronic neuropathies with neuronal- or axonal-degenerations, demyelinizations or a combination of both lesions. They have further been described in a number of other diseases such as diabetes mellitus type I, Grave's disease, chronic fatigue syndrome, mycoplasma- and other infections, Gaucher's disease, leukemias, lymphomas, renal-, liver-, cervical- and mamma-carcinoma, schizophrenia, Chagas cardiomyopathy, multiple sclerosis, craniocerebral injury, apoplexia, multi-infarctiondementia, epilepsy, SLA, Sjoegren syndrome and rheumatic arthritis.

In the so-called para-proteinemic neuropathies, the antibodies are monoclonal, in inflammatory neuropathies without accompanying paraproteinemia, polyclonal antibodies of the isotype IgG and IgM are present.

The following tests are available:

- **Monosialoganglioside 1 IgM antibodies (GM1)**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: EIA
  Units: Ratio
  Ref.- range: <10.0

- **Monosialoganglioside 1 IgG antibodies (GM1)**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: EIA
  Units: Ratio
  Ref.- range: <10.0

- **Monosialoganglioside 2 IgM antibodies (GM2)**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: MEIA
  Units: Ratio
  Ref.- range: <10.0

- **Monosialoganglioside 2 IgG antibodies (GM2)**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: MEIA
  Units: Ratio
  Ref.- range: <10.0

- **Monosialoganglioside 3 IgM antibodies (GM3)**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: Blot

- **Monosialoganglioside 3 IgG antibodies (GM3)**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: Blot

- **Disialoganglioside GD1a antibodies**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: EIA

- **Disialoganglioside GD1a IgM antibodies**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: Blot

- **Disialoganglioside GD1a IgG antibodies**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: Blot

- **Disialoganglioside GD1b antibodies**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: EIA

- **Disialoganglioside GD1b IgM antibodies**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: Blot

- **Disialoganglioside GD1b IgG antibodies**
  Material: 1 ml serum
  TAT: 7-10 days*
  Method: Blot

Ref.- range: up to 25.0

- **Quadrosialoganglioside IgG antibodies**

Material: 1 ml serum
TAT: 7-10 days*
Method: Blot
Ref.- range: up to 25.0

- **Quadrosialoganglioside IgM antibodies**

Material: 2 ml serum
TAT: 7-10 days*
Method: Blot

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit http://www.fml-dubai.com/parameter-listings/