

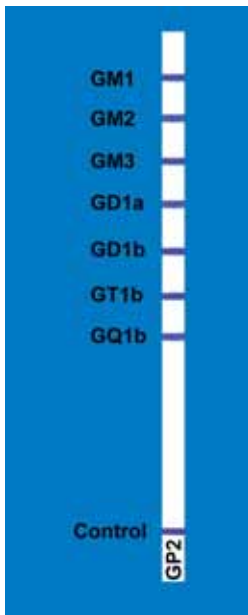


## EUROLINE Anti-Ganglioside Profile: A serological test for the diagnosis of inflammatory peripheral neuropathies

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EUROLINE Anti-Ganglioside Profile

Patient group	Ig class	GM1	GM2	GM3	GD1a	GD1b	GT1b	GQ1b
GBS (n = 71)	IgG	6	1	0	0	1	0	1
	IgM	13	10	1	1	3	3	1
CIDP (n = 13)	IgG	0	0	8	0	0	0	0
	IgM	0	8	15	23	8	0	0
MMN (n = 18)	IgG	0	6	6	0	0	0	0
	IgM	28	22	17	11	11	6	0
MFS (n = 5)	IgG	0	0	0	0	0	0	80
	IgM	0	0	0	0	0	0	0
Blood donors (n = 60)	IgG	0	0	0	0	0	0	0
	IgM	3	15	0	0	0	0	0

Prevalence of autoantibodies against gangliosides (%)  = high disease significance

### Introduction

Autoantibodies against gangliosides are found in patients with peripheral neuropathies, including **Guillain-Barré-syndrom (GBS)**, **chronic inflammatory demyelinating polyneuropathy (CIDP)**, **multifocal motor neuropathy (MMN)** and **Miller-Fisher syndrome (MFS; a subtype of GBS)**.

### Methods

Sera from clinically characterized patients with GBS (n = 71), CIDP (n = 13), MMN (n = 18) or MFS (n = 5) and sera from 60 healthy blood donors were investigated for antibodies of immunoglobulin classes IgG and IgM against gangliosides using the EUROLINE test system. Membrane strips printed with purified ganglioside fractions (GM1, GM2, GM3, GD1a, GD1b, GT1b, GQ1b) were used as the substrate. Autoantibodies were first bound to their specific antigens and then detected by means of a colour reaction with a enzyme-coupled secondary antibody.

### Results

**Antibodies against gangliosides** were detected in 16 of the GBS sera (23%), 5 of the CIDP sera (38%), 8 of the MMN sera (44%) and 4 of the MFS sera (80%; exclusively autoantibodies of class IgG against GQ1b).

11 blood donors (18%) were positive for **IgM antibodies against GM1** (3%) or against **GM2** (15%). Autoantibodies against the other gangliosides did not occur in healthy persons.

The IgM reactions with GM2 were considered unspecific. The other parameters gave the following prevalences:

Panel	Prevalence ganglioside AAb (IgG or IgM)
GBS patients	21% (15 sera)
CIDP patients	38% (5 sera)
MMN patients	39% (7 sera)
MFS patients	80% (4 sera)
Blood donors	3% (3 sera)

### Summary

Antibodies of class IgG and IgM are detected in sera from clinically characterized patients with GBS, CIDP, MMN or MFS at prevalences of between 20% and 80%. These antibodies are not found in healthy blood donors (with the exception of IgM reactivity against GM2).

### Conclusions

In some patients with inflammatory peripheral neuropathies autoantibodies against gangliosides are of great diagnostic relevance. EUROLINE is a new test system for fast and reliable determination of these antibodies in patient sera. By using a combination of different antigens on one strip, multiple autoantibodies against gangliosides can be investigated in one sample simultaneously.

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