

**External ID**

Name	<b>Muster</b>	Date of Birth	<b>07.11.1961</b>	Order ID	<b>11626254</b>
First Name	<b>Muster</b>	Sex	<b>Female</b>	Order Date	<b>20.11.2018</b>
Sampling Date	20.11.2018 00:00	Validation Date	Thomas Gugerele	Findings Status	<b>Final Report</b>
Sample Material	S, CPDA	Validation on	23.11.2018	Findings Date	26.11.2018

Test	Result	Unit	Standard Range	Previous Result
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**Infection Diagnostics**

**Borrelia ELISpot**

ELISpot Borrelia total antigen	<b>8,00</b>	Spots	< 5		CPDA NA) ELI
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Criteria: SI: < 2,0 = no reaction  
SI: 2,0 bis 3,0 = borderline reaction  
SI: > 3,0 = positive reaction

Stimulation Index whole antigen	9,0	Index			CPDA NA) ELI
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ELISpot Borrelia peptide pool	1,00	Spots	< 5		CPDA NA) ELI
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Criteria: SI: < 2,0 = no reaction  
SI: 2,0 bis 3,0 = borderline reaction  
SI: > 3,0 = positive reaction

Stimulation Index peptide pool	1,0	Index			CPDA NA) ELI
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**Borrelia IgG, IgM (Prescreen)**

Borrelia Burgdorferi IgM	negative				S NA) WB
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OspC of the tribes PKo (B.afzelii) and 20047 (B.garinii), as p41i of the tribe PBi (B.garinii).

Borrelia Burgdorferi IgG	negative				S NA) WB
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OspC of the tribes B31 (B.sensu stricto), 20047 and T25 (B.garinii), p100 and p18 from PKo (B.afzelii), as p41i of the tribe PBi (B.garinii).

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Report **06.12.2018**  
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## Immunology

### Elispot Borreliosis

The positive borrelia Elispot test argues in favour of active, not healed borreliosis.

The reason that (still?) no antibodies against borrelia could be determined may be due to a very early borreliosis stage or a massive incompetence in regard to antibody production (i.e. B-cell deficiency).

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## Therapy Recommendation

In case of respective disease pattern antibiotics should be considered. For primary therapy one may use tetracycline (e.g. doxycycline 200 mg/d) for 3-4 weeks. In case of already applied but unsuccessful tetracycline therapy, ceftriaxone infusions (2g/d) for 2-3 weeks are a possible therapeutic alternative. Another option is a therapy with modern macrolide antibiotics (e.g. azithromycin or clarithromycin) possibly combined with (hydroxy-) chloroquine or the combination of tetracycline with (hydroxy-) chloroquine.

### Complementary Therapy Recommendation

#### Infusion therapy to reduce inflammatory cytokines:

7.5 g vitamin C in 500 ml balanced electrolyte solution (e.g. isotonic saline solution, Ringer's solution, Delta-jonin®, Sterofundin® or similar.) – peripheral venous infusion over a period for 20 – 40 min.

Subsequently infuse 600 - 1200 mg GSH in 100 – 250 ml isotonic saline solution over a period of 10 – 20 minutes.

Two infusion combinations weekly for 4 – 18 weeks, then 1 infusion combination every one to four weeks for a longer period..

Followed by:

#### Vitamin B Infusion:

500 ml balanced electrolyte solution (e.g. Ringer's solution or similar):  
 + 100 mg thiamine\*\*  
 + 100 mg nicotinamide\*\*  
 + 100 mg dexpanthenol\*\*  
 + 100 mg pyridoxine\*\*  
 + 10 mg riboflavine\*\*  
 + 1 mg Hydroxy cobalamin\*\*

Then slow intravenous injection of 20 mg folic acid diluted in 10 ml isotonic saline.

\*\* e.g. „B Komplex forte“ of the “Victoria Apotheke Saarbrücken”.

Longer term 1 mg hydroxy cobalamin (vitamin B12 depot) subcutaneous injections once a week.

#### Oral Therapy

Substance	Morning	Midday	Evening	Night
Vitamin B1	100 mg			
Vitamin B2	20 mg			
Nicotinamide (B3)	200 mg			
Vitamin B6	25 mg			
Vitamin C	0,5 g		0.5g	
Coenzyme Q10	100 mg		100 mg	
Zinc	20 mg			
Devil's Claw Trex. (approx. 25 mg;5:1)	2		2	
Nettle Extract	600 mg (8:1)		600 mg (8:1)	

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With kind regards

Your Biovis-Diagnostik

**Attention:** *The recommendations given are only advice based on the compiled findings and possible clinical information. They are exclusively addressed to the therapist/physician and are not intended for direct transfer to the patient. They cannot replace diagnosis and therapy of the treating therapist. The recommendations for therapy are a suggestion. The responsibility for the final selection/measure/dosage lies with the medical professional/therapist responsible for each individual case. Please also note that there may be contraindications/interactions associated with the recommended medication/nutritional supplements for pre-existing primary diseases and when taking certain medication. These must be investigated by the medical professional/therapist before starting therapy.*