

## Peptides for Diagnostic and Treatment of Complex Regional Pain Syndrom

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### Challenge

Complex Regional Pain Syndrome (CRPS) is a multi-symptom, multi-system pain syndrome with currently unknown cause. Precipitating factors include traumas like injury and surgery. Investigators estimate that 2-5 % of patients with peripheral nerve injury and 0.1 % of all

trauma patients will suffer from CRPS. CRPS is a progressive disease that becomes chronic in more than 1/3 of the patients and is resistant to conventional pain therapy.

No specific diagnostic test is available for CRPS to date and experts estimate that fifty percent of cases go undiagnosed. This is considered to be a major problem, because - if untreated - CRPS can spread to all extremities, making the rehabilitation process a much more difficult one with permanent deformities and chronic pain leading to long-term financial consequences.

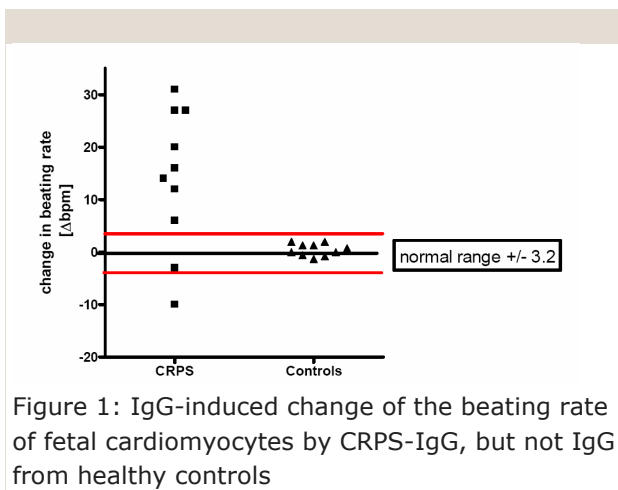


Figure 1: IgG-induced change of the beating rate of fetal cardiomyocytes by CRPS-IgG, but not IgG from healthy controls

Early, easy and accurate diagnosis and appropriate treatment for CRPS are still on demand.

### Technology

The present invention provides proteins and peptides which can be used in

- diagnosing and follow-up
- prophylaxis and therapy of CRPS.

Thanks to the new finding that autoimmunity aspects play a fundamental role in CRPS, autoantibodies against two G-coupled receptors were identified to play a prominent role in this disease. In established immunofluorescent cell assays a sensitivity and specificity of 80%-90% for detecting autoantibodies in patients' serum could be achieved. Data were generated with sera from more than 90 patients.

In tests with beating neonatal rat cardiomyocytes distinct peptides are capable of binding and neutralizing autoantibodies of CRPS patients efficiently.

### Commercial Opportunity

The technology is offered for co-development or in-licensing of know-how and IP for development of

- a specific diagnostic assay for CRPS based on the presence of defined autoantibodies;
- therapeutic approaches for inactivation or aphaeretic depletion of these autoantibodies.

### Patent Situation

A priority claiming patent application in EP has been filed in December 2008.

### Further Reading

A publication is in preparation. All data regarding the invention can be reviewed under a Confidentiality Agreement

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