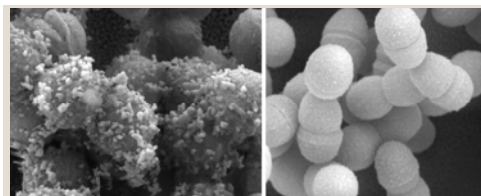


Challenge

Acute rheumatic fever (ARF) and the subsequent rheumatic heart disease (RHD) are serious sequelae following untreated or inadequately treated streptococcal infections. ARF and RHD remain one of the most significant causes of cardiovascular disease today, especially for children and young adults with about 0.25 million directly attributable deaths per year.



Binding and aggregation of collagen IV on the surface of group G streptococcal strains; (left) M-like fibrinogen binding protein (FOG) expressing strain and (right) a non-collagen binding strain

Technology

The invention discloses an octapeptide, which is a motif within the streptococcal M protein type 3 (M3 protein) and identified to be involved in the disease related collagen autoimmunity. This motif is referred to as *peptide associated with rheumatic fever* (PARF) and binds to the CB3 region of collagen IV (CIV), which is one of the

two prominent binding sites between CIV and M3 protein, the latter one being implicated in the pathogenesis of ARF. The interaction between M3 protein and CIV is a triggering step that induces generation of collagen-specific auto-antibodies. The identification of PARF and the CB3-region as binding partners can serve as molecular basis for a diagnostic test for rheumatogenic streptococci as a useful tool for stratifying therapy of patients with streptococcal infections

Commercial Opportunity

The technology is offered for co-development of a diagnostic assay or in-licensing.

Developmental Status

The development of a diagnostic ELISA-based assay is currently ongoing.

Patent Situation

Patent applications are pending in Europe, USA, Japan and India. The international application is published as WO2007/140953.

Further Reading

Dinkla et al. 2009: Crucial Role of the CB3-Region of Collagen IV in PARF Induced Acute Rheumatic Fever. PLoS ONE.4(3).

Dinkla et al. 2007: Identification of a streptococcal octapeptide motif involved in acute rheumatic fever. J Biol Chem. 282(26):18686-93.

Berlin
Braunschweig
Hamburg
Hanover
Munich
Neuherberg

Ascenion GmbH
Herzogstraße 64
D-80803 Munich
T +49 (0) 89 31 88 14 - 0
F +49 (0) 89 31 88 14 - 20
info@ascenion.de
www.ascenion.de