Therapy for heparin-induced thrombocytopenia (HIT) targeting the epitope structure of the disease –inducing antibody

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Technology description

Technology Overview
Roughly 12 million patients are exposed to heparin annually and up to 1% of these patients will develop heparin-induced thrombocytopenia/thrombosis (HIT), a life-threatening complication where patients make antibodies that bind to the heparin/PF4 complex, resulting in thrombosis and thrombocytopenia. The Greene lab has identified and compared two antibodies respectively named KKO and RTO. KKO recognizes PF4 and stabilizes the complex with heparin, a critical initiating step in the pathogenesis of HIT. Conversely, RTO binds to an epitope that overlaps with KKO on the surface of PF4, preventing PF4 tetramerization, a critical step for the pathogenesis of HIT. This knowledge of KKO and RTO will support the development of an antibody assay to diagnose and/or monitor the progression of HIT but also the development of non-anticoagulant treatment.
Keywords: Life Science, thrombocytopenia, diagnostic, therapeutic, antibody

Advantages

• Knowledge of the first crystal structure of PF4 in a complex with Fabs
• Provides novel target epitope for diagnosing and the development of non-anticoagulant therapeutics for HIT
• Potential to decrease misdiagnoses, decrease rates of complications, and decrease mortality

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