β_2-glycoprotein I, the major target in antiphospholipid syndrome, is a special human complement regulator.

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Projects

Complement regulation in kidney cells
Details

Abstract

The human plasma protein β(2)-glycoprotein I (β(2)-GPI) is the major target of autoantibodies associated with antiphospholipid syndrome. However, the biologic function of this abundant protein is still unclear. Here we identify β(2)-GPI as a complement regulator. β(2)-GPI circulates in the plasma in an inactive circular form. On surface binding, such as to apoptotic cells, β(2)-GPI changes conformation to an elongated form that acquires C3/C3b binding activities. β(2)-GPI apparently changes conformation of C3, so that the regulator factor H attaches and induces subsequent degradation by the protease factor I. β(2)-GPI also mediates further cleavage of C3/C3b compared with factor H alone. Our data provide important insights into innate immune regulation by plasma protein β(2)-GPI, which may be exploited in the prevention and therapy of autoimmune disease antiphospholipid syndrome.

Identifier

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