Human properdin (complement factor P) is a single-chain plasma glycoprotein with an apparent molecular mass of 52-55 kDa. The protein domain structure of properdin consists of six thrombospondin repeat sequences between short N- and C-terminal domains. In blood, properdin exists as a mixture of head-to-tail dimers, trimers and tetramers. The protein is expressed by a variety of leukocytes, including monocytes, T lymphocytes and neutrophils, but also by endothelial cells in which properdin synthesis is induced by certain stress factors. Properdin participates in the alternative pathway of complement activation together with C3 and factors B, D, I and H by prolonging the half-life of the labile C3bBb, which is deposited on immune complexes or foreign surfaces. This permits amplification of C3bBb formation in competition with catabolism of C3b by factor I, which uses factor H as a cofactor. The local amplification process leads to the creation of the alternative pathway C5 convertase, C3bBb3b, and initiates the terminal pathway of complement activation. As a consequence, properdin is consumed by binding to C3bBb3b, which shows an order of preference of tetramers over trimers over dimers, which corresponds to the functional activity of the oligomeric forms. Deficiency or malfunction of the molecule may lead to severe impairment of alternative pathway activation, depending on the precise nature of the defect. Three types of deficiencies have been described so far: type 1 (or I) is characterized by serum with very low or absent properdin activity in hemolytic assays and <0.1 μg/ml immunoreactive protein; type 2 (or II) is characterized by low but detectable levels of immunoreactive protein (>2 μg/ml) and impairment of some, but not all functional test, and type 3 (or III) has normal levels of immunoreactive but dysfunctional protein (5-25 μg/mL). Lower properdin levels were found in 70% of diabetic patients when compared to nondiabetic controls and is suggested by the authors that patients with low expression of properdin take preventive measures and early treatments against infection. HC2132 is purified from normal human serum.

Also available

- HC2123 Natural Human C1q
- HC2124 Natural Human C2
- HC2125 Natural Human C3
- HC2126 Natural Human C3a
- HC2127 Natural Human C3a desArg
- HC2128 Natural Human C4
- HC2129 Natural Human Complement factor B
- HC2130 Natural Human Complement factor H