Treating Hemophilia B with Modified Protein

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Technology description

Hemophilia B is the second most common form of hemophilia, affecting one in 20,000 to 30,000 males and causing joint bleeding, chronic pain, stiffness and even death. The disease is caused by a deficiency of coagulation Factor IX, a protein involved in blood clotting.

Typically, patients are administered an intravenous dose of Factor IX to boost their levels. Multiple administrations generally are required. A recombinant form of Factor IX was recently approved for clinical use (commercial name BeneFIX). A UW–Madison researcher has developed new Factor IX mutants for treating blood coagulation conditions, including hemophilia B, hemorrhagic disorder and thrombosis. The modified proteins contain combined mutations in the heparin and antithrombin binding sites that prolong half-life and stability.

The new mutants show improvedin vivoactivity and more sustained therapeutic effect than naturally occurring Factor IX. They could potentially be administered intravenously, orally or by another route. The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing new treatments for bleeding disorders using mutant Factor IX proteins that are more stable and longer lasting.

Application area

New treatments for hemophilia B and other bleeding disorders

Advantages

May be used to deliver longer-lasting, more stable therapies
Effective at lower dosage
May require less frequent administrations
Decreased side effects

Institution

Wisconsin Alumni Research Foundation

Inventors

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