

## Modified Factor Xa Polypeptides to Recover Clotting Activity in Subjects Treated with Direct Oral Anticoagulants (DOACs)

### Technology Summary

Direct oral anticoagulants (DOACs) are used to treat patients with thromboembolic or clotting disorders, including those at risk for blood clots due to deep vein thrombosis, strokes, heart attacks, and pulmonary embolism. Patients receiving DOACs are at risk of excessive bleeding during accidents or emergency surgeries and require a means for reestablishing blood clotting. This technology may provide a means for directly reestablishing clotting in people receiving DOACs.

DOACs act by directly binding an enzyme that plays a critical role in coagulation, factor Xa, blocking coagulant activity. In emergency situations, the current strategy for reversing the anticoagulant activity of DOACs is to provide a decoy variant factor Xa receptor for it to bind instead of native factor Xa restoring its coagulation activity. This invention provides a novel alternate strategy for directly reestablishing factor Xa coagulation by using a variant factor Xa polypeptide that retains coagulant activity in the presence of DOACs.

### Potential Commercial Applications

- Reestablish clotting activity in people receiving Direct Acting Anticoagulants
- Treatment of patients in emergency situations

### Competitive Advantages

- Directly reestablishes clotting activity in people taking DOACs
- Improved safety profile enabled by smaller therapeutic dosage requirements

**Development Stage:** Proof-of-concept, In vivo animal data

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**Publication(s):** NA

**Intellectual Property:** U.S. provisional application 63/339,230 was filed May 6, 2022

**Product Area:** Biologics, Direct Acting Anticoagulants, DOACs, Thromboembolic Disease, Bleeding Disorders

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