Coagulant Therapeutics
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Stopping acute bleeds, starting with severe postpartum hemorrhage

Coagulant Therapeutics is developing a novel pipeline of therapeutics to treat acute bleeds led by CT-001, a next-generation factor VIIa (FVIIa) molecule.

Acute bleeding associated with traumatic injury is the leading cause of death between ages 1 to 46. Although 20–40% of hemorrhage-related deaths are potentially preventable with rapid hemostatic control, safe and effective pharmaceutical treatments to address this $20 billion market are lacking.

Coagulant Therapeutics—a privately held biotech company of seasoned drug developers specializing in biologics and the coagulation cascade—is here to fill that void. Drawing on over 100 years of collective experience in biopharmaceutical development, the company is leveraging the full range of biological formats to develop novel therapeutics that treat acute bleeds.

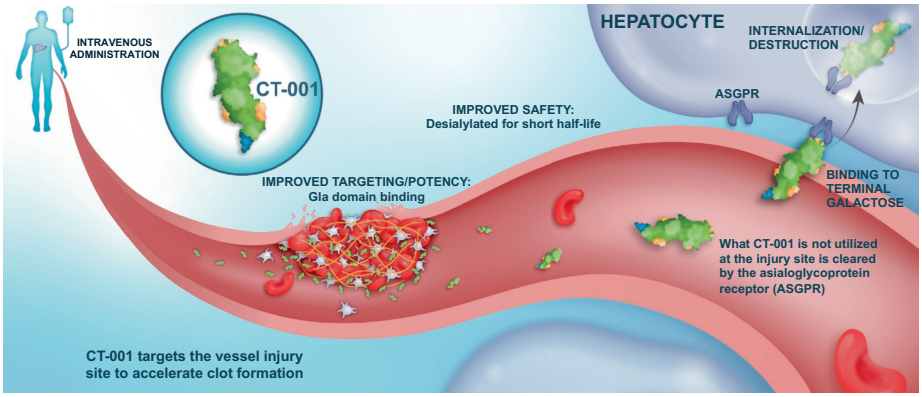

Fig. 1 | Mechanism-of-action of CT-001. This uniquely engineered, recombinant coagulation factor VIIa (rFVIIa) is administered intravenously. Gamma-carboxyglutamic acid (Gla)-domain amino-acid substitutions improve bleeding-site targeting and potency, accelerating clot formation. Unused CT-001 molecules are rapidly cleared from circulation via the recognition of exposed galactose residues by asialoglycoprotein receptors (ASGPRs) expressed on hepatocytes. CT-001's enhanced efficacy and safety have been demonstrated in preclinical studies[1,2].

Engineering fit-for-purpose treatments

Although the European Medicines Agency (EMA) recently approved a recombinant FVIIa (rFVIIa) for the treatment of acute bleeding in postpartum hemorrhage (PPH), its use is associated with risks of serious thromboembolic events such as clots in the heart or brain. "The coagulation cascade is composed of a set of exquisitely controlled cofactors and proteases," explained Coagulant's founder and CEO, Terry Hermiston. "Although FVIIa is essential to stop bleeding, it must be tightly regulated to prevent unwanted thromboembolic events."

The team at Coagulant Therapeutics has addressed this problem by designing and developing CT-001, a next-generation FVIIa molecule. CT-001 contains key substitutions for greater affinity and activity[1], and for safety, the engineering of exposed terminal galactose residues tap into the bodies natural recycling center, the liver, for rapid, active clearance from circulation (Fig. 1). Coagulant has shown that this rapid clearance occurs without compromising its life-saving activity[2].

Superior potency

"Compared to rFVIIa, the potency of our FVIIa molecule is two-to-five times higher, depending on the assay, and its half-life has been reduced from two hours to three minutes," said Hermiston. "The enzyme doesn't have to be in the body long to be effective, and any that isn't used where it's needed is rapidly removed, thus making it considerably less likely to form unwanted clots elsewhere."

The entry indication for CT-001 is severe PPH (sPPH), the leading cause of maternal morbidity and mortality globally, with most cases occurring in low- or middle-income countries. Ex vivo studies on postpartum blood samples confirm the activity seen in the preclinical studies relative to rFVIIa[3].

Furthermore, administration of CT-001 is straightforward, making it accessible to a considerably greater population than current treatments. "While almost all PPH originates in the uterus or from birth trauma, failure of normal hemostasis occurs when the process is massive, resulting in even greater blood loss and possible death. The ability to manage an sPPH, especially when accompanied by failure of coagulation, is difficult or impossible in rural hospitals or low-resource settings, where treatment options are limited," said Andra James, professor emeritus of obstetrics and gynecology at Duke University School of Medicine. "Importantly, CT-001 can be given intravenously and without specialized training, facilitating its use outside of the tertiary-care setting and even outside of the hospital, enabling its further use in ambulances or on the battlefield."

Diverse pipeline and partnering opportunities

Coagulant Therapeutics has a pipeline of well-differentiated molecules that uniquely not only stop bleeding but also address endotheliopathy, a process by which the endothelial barrier is compromised, which can lead to morbidity and mortality in the acute-bleeding setting.

> **"As we transition towards the clinic, we are looking for partners to advance CT-001**
>
> Terry Hermiston, CEO, Coagulant Therapeutics

Clinical trials of CT-001 in treating sPPH are expected to begin in 2026. Proof of safety and activity may allow expansion into additional bleeding indications, such as traumatic brain injury, intracranial hemorrhage and trauma, which have high mortality and significant unmet need for highly differentiated treatments.

"Our FVIIa is a highly potent molecule envisioned for the safe treatment of uncontrollable, fatal severe postpartum hemorrhage. It is easy to administer, and addresses the known limitations and liabilities of currently available rFVIIa in this indication," said Hermiston. "As we transition towards the clinic, we are looking for partners to advance CT-001 and our other exciting programs for the benefit of patients and their families regardless of their location."

1. Sim, D. S. et al. *Res. Pract. Thromb. Haemost.* **5**, e12530 (2021). https://doi.org/10.1002/rth2.12530
2. Sim, D. S. et al. *Thromb. Res.* **215**, 58–66 (2022). https://doi.org/10.1016/j.thromres.2022.05.007
3. Sim, D.S. et al. *Blood. Adv.* **8**, 287-295 (2024). https://doi.org/10.1182/bloodadvances.2023011398

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