PRODUCT PIPELINE | NON-FACTOR COAGULATION PRODUCTS (DECEMBER 8, 2017)

NAME	COMPANY	TYPE	CLINICAL TRIALS	DESCRIPTION
Emicizumab - Anti-factor IXa/X bispecific antibody (called Hemlibra in the U.S. and previously called ACE910)	Chugai Pharmaceutical Co, Genentech & Roche	A monoclonal antibody that acts as a FVIII-mimetic cofactor	In July 2016, Roche announced Phase I/II study results with 16 patients with and without inhibitors, showing very low annual bleeding rates with once-weekly subcutaneous injections after up to 32 months of follow-up. Roche started a pivotal Phase III trial in late 2016. In November 2017, the U.S. FDA licensed emicizumab, under the brand name Hemlibra, for on-demand and prophylactic treatment of patients with hemophilia A and inhibitors with weekly sub-cutaneous injections. The label includes a "black box" warning around the use of activated prothrombin complex concentrate (FEIBA) because of the risk of thrombotic complications. In late November 2017, Roche(Genentech) announced positive results for its Phase III trial (HAVEN III) in patients with hemophilia A without inhibitors. The once-weekly Hemlibra therapy reported superiority in reducing treated bleeds to factor VIII prophylaxis in an intra-patient comparison.	Emicizumab is a bi-specific antibody that mimics coagulation factor VIII with a half-life of three weeks. It may offer an alternative on-demand treatment option for patients with hemophilia A with or without inhibitors, as well as user-friendly, sub-cutaneous routine prophylaxis.
Fitusiran (ALN-AT3)	Alnylam Pharmaceuticals Inc. (in alliance with Genzyme)	A subcutaneously delivered RNAi therapeutic. It has the potential to be used in a number of bleeding disorders.	The FDA has granted orphan drug status to this compound for both hemophilia A and B. In December 2016, Alnylam announced that once-monthly subcutaneous administration of fitusiran at two fixed dose levels, 50 mg (6 patients) and 80 mg (10 patients), achieved potent and dose-dependent lowering of antithrombin (AT) and increases in thrombin generation in patients with hemophilia A or B with inhibitors. Median annual bleeding rates fell dramatically. During a Phase III trial in mid-2017, however, the company announced the death of one of the 33 trial subjects due to an intracranial clot. The trial was put on temporary hold. In November 2017, Alnylam announced it had agreed with the regulator, the U.S. FDA, to stricter safety measures and risk mitigation strategies. The trial may be re-started in 2018.	ALN-AT3 aims to correct the hemostatic imbalance in hemophilia by reducing antithrombin, an endogenous anticoagulant, thus increasing thrombin generation and improving hemostasis. with once-a-month subcutaneous dosing.