5-17-2022

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BENCHSIDE-TO-BEDSIDE TRANSLATION OF NOVEL TARGETS FOR REGULATING BLOOD CLOTS IN MAN

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Key Words: Blood Clotting, Platelets, Thrombosis, Drug Discovery, Lipids

Cardiovascular disease is the leading cause of morbidity and mortality globally. Platelets represent the first line target in prevention and treatment of cardiovascular diseases as they are required for an occlusive or thrombotic clot to form in the vessel under pathological conditions. While a number of antiplatelet drugs are currently available, the level of cardiovascular mortality continues to be of great concern. Utilizing our knowledge gained around new targets in the platelet, we have developed a first-in-class and first-in-human small molecule inhibitor of the platelet enzyme 12-lipoxygenase. We have developed this inhibitor through an extensive screen, shown its selectivity, as well as potency, and advance this molecule to IND approval and first-in-man studies. In addition to development of this small molecule inhibitor, we have teamed up with collaborators to identify 1) how best to package the VLX-1005 (ML355) for delivery as well and 2) development of more complex models of vessel architecture in order to test its utility in a variety of disease states and tissue beds. Through this collaborative team, we have been able to create a roadmap for drug discovery, development, and delivery that translates from the benchside-to the bedside and improves patient health.