

## A1M Pharma initiates research collaboration with global leader CSL Behring for combination treatment with A1M and plasma proteins

**A1M Pharma has initiated a research collaboration with global biotherapeutics company CSL Behring to investigate the potential for combining Alpha 1 Microglobulin (A1M) with proteins extracted from the fractionation of human plasma such as hemopexin and haptoglobin. This collaboration strengthens A1M Pharma's position in the use of A1M for the treatment of life-threatening diseases with therapies that are based on naturally occurring substances.**

Many proteins in the human body contribute to immunoprotection against disease processes. Their different activities often act together to address the complex biochemical processes that occur in connection with damage to tissues and infection. When red blood cells are broken open by injury or disease, the body's defenses operate at different levels and in different pathways to clear up the "spillage" of these cells' contents, especially hemoglobin and its by-products when it breaks down in the blood releasing reactive oxygen species (ROS). These compounds can penetrate and damage the tissues of organs such as the kidneys, and are what causes serious conditions such as pre-eclampsia and acute kidney injury.

The endogenous protein A1M is thought to provide many of the protective mechanisms in bodily tissues while hemopexin and haptoglobin are mainly active in the circulating blood. This means that it may be possible to combine these substances to potentially achieve additional therapeutic benefits by developing combination treatments. The objective of the research collaboration is to investigate these possibilities.

The research program under the collaboration will be a joint endeavor, with each company carrying its own costs. For A1M Pharma's part, the cost of the collaboration lies within the existing research budget for modes of action of A1M as it affects pre-eclampsia and related conditions. This means that the collaboration strengthens A1M Pharma's intensive research program for patients suffering from kidney related diseases and also directly supports A1M Pharma's progress in drug development.

"We look forward to partnering with A1M Pharma to advance the current science in this important yet complex area," said Andrew Nash, CSL's Senior Vice President of Research. "We are truly excited about the potential of these combined proteins and are eager to explore the differential actions of our proteins, haptoglobin and hemopexin, in combination with A1M."

A1M Pharma's Development Manager Eddie Thordarson welcomes the collaboration with CSL Behring, a global biotherapeutics leader and one of the world's largest manufacturers of drugs based on plasma proteins.

"The collaboration with CSL Behring lends support to our research program in naturally occurring proteins that form the basis for effective treatments for important indications. The collaboration with CSL Behring's experienced and respected industry research group provides us with important insight into dosing and delivery of therapeutic proteins," commented A1M Pharma's Development Manager Eddie Thordarson.

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### About A1M Pharma

A1M Pharma develops a diagnostic method and treatment for pre-eclampsia, a condition that affects around 10 million pregnant women worldwide each year. This disorder is responsible for 76,000 maternal and 500,000 infant deaths each year and it is the cause of 15 % of all premature births. Currently, there is no effective diagnostic method or curative treatment for impaired kidney function associated with pre-eclampsia. The only option is therefore to terminate pregnancy by inducing delivery which leads to premature infants and substantial health care costs. Several studies indicate that A1M Pharma's candidate drug, the protein A1M (alpha-1-microglobulin), restores the

impaired kidney function by repairing damaged tissue and protect against oxidative stress. New findings indicate that the cells within the heart are protected in a similar way. Apart from the connection with pre-eclampsia, kidney injury is a condition often accompanying major surgery and transplantation and the company is therefore also developing a treatment for the closely related indication acute kidney injury. Acute kidney injury that can lead to permanent kidney damage affects 12 million people every year.