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Two new Swedish PhD thesis support scientific rationale for the treatment of oxidative stress with A1M protein

Two recently published PhD thesis from Lund University strengthen the scientific basis of the protein A1M's protective mechanism of action in connection with oxidative stress. Firstly, the potential of fetal hemoglobin and A1M as biomarkers of pre-eclampsia is verified in a larger patient group than previously and secondly A1M's therapeutic effects on oxidative stress is demonstrated for the first time in an animal model in the placenta and kidney and skin and eye cells.

The first thesis, written by Ulrik Dolberg Anderson, under the supervision of A1M Pharma's co-founder, Professor Stefan Hansson, focuses on fetal hemoglobin and A1M as biomarkers of pre-eclampsia. It verifies the potential of these biomarkers in a larger patient group than previous studies. It also points out that the mother's A1M storage is consumed by the disorder and that a reduced level of A1M leads to an aggravation of the symptoms. Furthermore, it reveals new findings surrounding the mechanisms behind the kidney injuries that constitute a central part of the disorder´s harmful effects.

Finally, results from the study show that, with a simple blood test, A1M Pharma's diagnostic method can predict if a pregnant woman has an increased risk of developing pre-eclampsia during a later stage of the pregnancy as early as week 8-10. It can also be used to determine how seriously a mother is affected later on in pregnancy.

The other thesis, written by Martin Cederlund, under the supervision of A1M Pharma's co-founder, Professor Bo Åkerström, examines the protective features of A1M on different types of cells in the body affected by oxidative stress. The study confirms that the level of A1M increases naturally depending on the severity of the oxidative stress and it also confirms that the protein has a protective effect on cells from the placenta, skin and eye. However, the body's own production of A1M is not sufficient in cases of severe oxidative stress, and in an earlier presented study, that is part of the thesis, the therapeutic effects of added A1M are shown for the first time in a unique animal model of pre-eclampsia. In this model the scientists were able to restore the kidney function and also saw improvements in the structure of the placenta. In addition, the results show that A1M can prevent lipoprotein from oxidizing and blocking the blood vessels in the heart, which is one of the underlying causes of cardiovascular diseases.

– These two theses give additional credibility to protective effect of our A1M based candidate drug on the cells in the placenta, as well as in the kidney and in other parts of the body in connection with oxidative stress. This is very inspiring since we are in the middle of an intensive development phase. The new findings surrounding the mechanisms behind kidney injuries increase our understanding of the company's main indications. The results also confirm A1M's ability to protect a range of different cell types and tissues against oxidative stress, which enhances the growing reputation of A1M as powerful and versatile diagnostic and therapeutic agent, says A1M Pharma’s CEO, Tomas Eriksson.

The entire thesis of Ulrik Dolberg Anderson, entitled ”New predictive and diagnostic biomarkers for preeclampsia”, can be downloaded via the following link:
http://www.lu.se/lup/publication/7862984

More information about Martin Cederlund's thesis, entitled "Therapeutic opportunities of alfa-1-microglobulin", is available via the following link:
http://www.lu.se/lup/publication/7854542

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.

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