

Modus Therapeutics announces paper in PLOS ONE demonstrating the anti-adhesive properties of sevuparin in malaria patients

**STOCKHOLM, SWEDEN – 20 December, 2017. Modus Therapeutics AB, a company focused on innovative treatments for patients with sickle cell disease (SCD), announces the publication of an important paper demonstrating the anti-adhesive properties of sevuparin in patients with malaria. The paper titled, “Inhibition of merozoite invasion and transient de-sequestration by sevuparin in humans with Plasmodium falciparum malaria,” outlines the findings of a Phase I/II trial clinical trial of sevuparin in patients with malaria.**

Sevuparin has been designed, through a chemical depolymerization of heparin to have both anti-adhesive and anti-inflammatory effects without the anti-coagulation effects seen with heparin. Preclinical studies support the hypothesis and this paper presents the first clinical data with sevuparin demonstrating its anti-adhesive properties, which are expected to be of benefit to both malaria sufferers and SCD disease patients who suffer from blocked blood vessels.

The Phase I/II trial was a randomized, open label, active control, parallel assignment study in which sevuparin was administered via short intravenous infusions to patients with uncomplicated malaria who were also receiving atovaquone/proguanil treatment.

Serious malaria occurs when the patients red blood cells become adhesive as a result of infection with the parasite Plasmodium falciparum. This leads to clogged blood vessels due clumping of the red blood cells and adherence of the red blood cells to the vessel walls.

Amongst the key findings of the study, which were highlighted in the PLOS ONE publication, were:

- Sevuparin was safe and well tolerated in the malaria patients
- Sevuparin, due to its anti-adhesive properties, was able to open up previously clogged blood vessels
- Sevuparin rapidly inhibited the growth of the Plasmodium falciparum, the parasite that causes malaria

The paper, published in PLOS ONE, [can be found here](#).

This is the first time that these results have been achieved in humans. Mats Wahlgren, Chief Scientific Officer of Modus and professor at Karolinska Institutet said: “These results provide excitement for the potential of sevuparin in malaria, something the company will continue to evaluate given the high unmet need and mortality in this devastating disease that causes more than 400,000 deaths annually.”

Sevuparin is currently being developed for the treatment of sickle cell disease (SCD) and this paper provides the first clinical evidence of sevuparins’ anti-adhesive action. SCD is caused by a mutation in the hemoglobin gene which leads to their red blood cells becoming sickled in shape and sticky, attaching to other blood cells and to blood vessels walls. This leads to a reduced blood flow and impaired transport of oxygen to vital organs.

Ellen K. Donnelly, Chief Executive of Modus Therapeutics, said: “We are very pleased that this clinical study demonstrating the anti-adhesive properties of sevuparin has been published. These data reinforce our confidence that the current Phase II clinical study with sevuparin for SCD will deliver positive result when it reads out in 2018.”

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## **TO THE EDITORS**

### **About Modus Therapeutics AB**

Modus Therapeutics is a Swedish biotech company developing sevuparin – a new drug to treat people suffering from sickle cell disease (SCD) – a painful, inherited blood disorder affecting millions of people around the globe. Sickle cell disease patients’ blood cells form a sickled shape, which makes blood flow to vital organs difficult, causing severe pain and even premature death. Sevuparin has the potential to improve the SCD patients’ blood flow reducing their pain and the amount of time they will need to spend in hospital and is currently recruiting for a Phase II clinical study. Modus plans to develop an administration form of sevuparin that the patient can self-administer allowing them to live a more normal life by preventing the painful episodes requiring hospital care.

Modus is predominantly owned by KDev Investments AB, part of Karolinska Development AB (Nasdaq Stockholm: KDEV) and Rosetta Capital. Other larger owners are The Foundation for Baltic and European Studies (Östersjöstiftelsen) and Praktikerinvest AB. For more information, please visit [www.modustx.com](http://www.modustx.com)

### **About sevuparin**

Sevuparin is an innovative, proprietary polysaccharide drug, which has the potential to restore blood flow and prevent further microvascular obstructions, caused by abnormal blood cells in SCD patients. With its anti-adhesive properties, sevuparin could thereby offer treatment of the underlying cause of vaso-occlusive crisis (VOC) in SCD patients, with earlier pain relief, shorter hospital stay, reduced need of opioids and improved quality of life. Modus is currently enrolling patients in a Phase II study with the aim to present data during first half 2018.

### **About sickle cell disease**

Sickle cell disease (SCD) is a painful, inherited blood disorder affecting millions of people around the globe and the most common inherited blood disorder in the U.S. affecting between 90,000-100,000 subjects, with medical care costs amounting to more than \$1 billion. In Europe it is estimated that there are 35,000-40,000 SCD patients, and this number is higher in the Middle East and North Africa regions, with over 850,000 SCD patients.

There is currently no pharmaceutical product available that targets the underlying cause of VOCs that affect SCD patients. Current therapies are predominantly strong intravenous pain medications and SCD patients often have to be hospitalized in order to be treated.