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Novel Therapeutics in the Treatment of Sickle Cell Disease: Expression and Purification of Hemoglobin and Sickle Cell Hemoglobin

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Poster Presentation P60

**NOVEL THERAPEUTICS IN THE TREATMENT OF SICKLE CELL DISEASE:
EXPRESSION AND PURIFICATION OF HEMOGLOBIN AND
SICKLE CELL HEMOGLOBIN**

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Sickle cell disease is an inherited blood disorder characterized by sickle shaped red blood cells. The abnormal shape of the red blood cells stems from a mutation in the gene coding for hemoglobin causing hemoglobin to aggregate under deoxygenated conditions. Sickled red blood cells have a short life span and their shape clogs blood vessels and capillaries which bring about the symptoms of sickle cell disease. Sickle cell disease effects people world wide, but especially in Africa where one in 500 people are born with the illness. Currently, there is no universal treatment for Sickle cell. This research is to discover a way to alleviate the symptoms of sickle cell disease by inhibiting hemoglobin aggregation. In order to study hemoglobin, we must develop a system to express and purify hemoglobin (Hb) and sickle cell hemoglobin (HbS) in high yields. In this study, Hb and Hbs are expressed in E. coli bacteria and them column purified.