P-selectin Inhibitor for the Treatment of Sickle Cell Disease

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Technology description

Market Summary

Sickle cell anemia, a serious disorder in which the body makes sickle-shaped red blood cells, affects an estimated 95,000 Americans and a majority of these are African Americans. About two million Americans or 1 in 12 of African Americans have the sickle cell trait. The most common clinical manifestation of sickle cell disease is vaso-occlusive crisis, which results in an average of 2.5 hospital visits per year for sickle cell patients in the U.S. Current treatments for vaso-occlusive crisis, such as opioids and rehydration, are primarily focused only the management of symptoms.

Technical Summary

P-selectin is a constitutively expressed carbohydrate-binding protein that helps activate leukocytes to initiate the inflammatory response in mammals. The best characterized ligand for P-selectin is called P-selectin glycoprotein ligand-1 (PSGL-1) which is expressed on the surface membranes of all leukocytes. PSGL-1 supports leukocyte recruitment in both innate and adaptive arms of the immune response. Because PSGL-1 plays an important role invascular endothelial signaling, a PSGL-1 mimetic with the ability to block the activity of P-selectin has the potential to treat multiple indications, such as sickle cell anemia vaso-occlusive crisis, vascular inflammation, and thrombosis.

Application area

A glycopeptide inhibitor of p-selectin for the treatment of sickle cell disease.

Advantages

Blocks the activity of P-selectin with nM affinity.
Potential treatment forvaso-occlusive crisis associated with sickle cell disease.
Inhibits the earliest stage of leukocyte activation helping to prevent immune response.

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