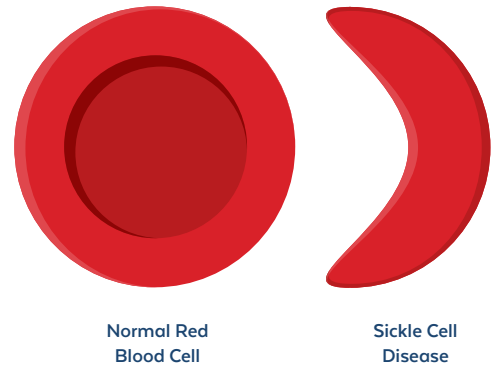


Lateral Flow Assays for Sickle Cell Disease

Sickle cell disease affects over 250 million people worldwide. It is a multifaceted disease characterized by chronic hemolytic anemia, unpredictable episodes of pain, and widespread organ damage (Reviewed in Kato et al. 2018) and can be hereditarily passed on from an infected parent to a child. Early detection is key to improving the quality of life of those affected and help reduce the number of children affected.

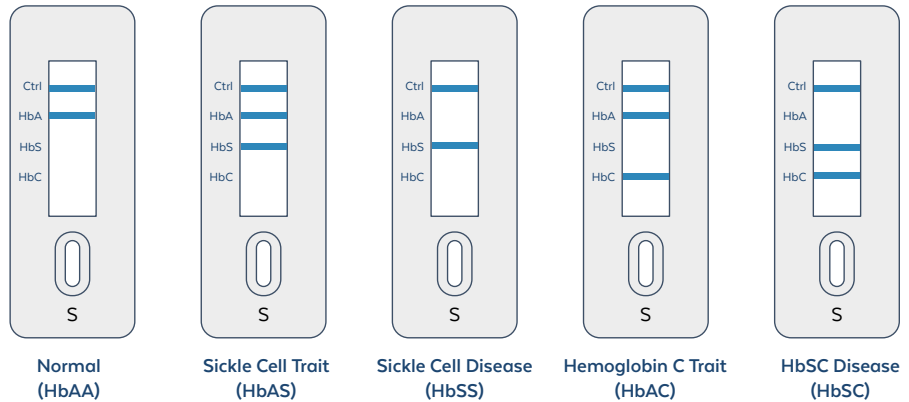
The long-term availability of reliable antibodies for point-of-care tests is among the biggest challenges for diagnostic companies. Rockland’s scalable in-house manufacturing capabilities make us a reliable partner for the supply of these critical reagents to the industry.



Sickle Cell Disease Screening Using Rockland Lateral Flow Antibodies

Lateral flow assays can be used to diagnose and monitor the severity of hemoglobin disorders by testing blood samples for markers such as hemoglobin beta S. They are simple and portable point-of-care screening tools that can help identify disease before the onset of symptoms so that treatment regimens can be set..

Recently, two scientific papers were published highlighting lateral flow assays as diagnostic tools for the detection of sickle cell anemia in low to middle-income countries (LMICs) (Chen A et al., Lancia M et al.). Both publications rely on Rockland’s hemoglobin antibodies (#200-301-GS4 and #200-301-GS5) to provide scalable and cost-effective solutions requiring only a single drop of whole blood as the sample.



Rockland’s antibodies can be used to rapidly detect sickle cell traits and disease variants within the same lateral flow assay.

Why Rockland



60+ Years of Experience

Rockland has been a trusted provider of critical reagents since 1962, collaborating with the world’s largest IVD companies



Recognized Excellence & Quality

The U.S. NIH selected Rockland to develop sickle cell antibodies now used in research, diagnostic, & therapeutic programs across the nation



Secure Supply Chain

Rockland oversees and manages every aspect of design and production with a U.S. based vivarium and QA systems for fully traceable manufacturing



Scalable Manufacturing

Our in-house R&D and manufacturing capabilities allow for a tailored production schedule for small- to large-scale quantities

Sickle Cell Disease Antibodies

With the support of the National Heart, Lung, and Blood Institute (NHLBI), Rockland has successfully developed a set of antibodies for the detection of hemoglobin variants. These antibodies have been designed for use in lateral flow assays and are suitable for a wide range of immunological applications.

Product	Item No.	Reactivity	LFA Function	Applications
Hemoglobin Antibody	200-301-MV4	Human	Detection	ELISA, SDS-PAGE, WB, LFA
Hemoglobin A (beta chain) Antibody	200-301-GS4	Human	Capture	ELISA, SDS-PAGE, WB, Biochemical Assay, LFA
Hemoglobin beta A-2 Antibody	200-301-GS8	Human	N/A	ELISA, SDS-PAGE, WB
Hemoglobin beta C Antibody	200-301-GS7	Human	Capture	ELISA, WB, LFA
Hemoglobin beta F Antibody	200-301-GS6	Human	N/A	ELISA, SDS-PAGE, WB
Hemoglobin beta S Antibody	200-301-GS5	Human	Capture	ELISA, SDS-PAGE, WB, Biochemical Assay, LFA

Sickle Cell Disease Peptides

Product	Item No.	Synonyms
Hemoglobin A (beta chain) Control Peptide	000-001-GS4	Hb β Control Peptide, Hemoglobin beta subunit, HBB
Hemoglobin A-2 Control Peptide	000-001-GS8	HbA-2 Control Peptide, Hemoglobin Subunit Delta, Hemoglobin Delta Chain 4, Delta-Globin 4, HbD
Hemoglobin C Control Peptide	000-001-GS7	HbC Control Peptide, Hemoglobin beta subunit C variant, HbBc, HbC
Hemoglobin F Control Peptide	000-001-GS6	HbF Control Peptide, Hemoglobin delta subunit, HBG1, HBG2
Hemoglobin S Control Peptide	000-001-GS5	HbS Control Peptide, Hemoglobin beta subunit sickle mutant, HBS, HBBs

References

1. Kato, G. J., Piel, F. B., Reid, C. D., Gaston, M. H., Ohene-Frempong, K., Krishnamurti, L., Smith, W. R., Panepinto, J. A., Weatherall, D. J., Costa, F. F., & Vichinsky, E. P. (2018). Sickle cell disease. *Nature reviews. Disease primers*, 4, 18010.
2. Chen A et al. Reducing Child Mortality in Sierra Leone with a Sustainable Diagnostics Device for Sickle Cell Disease. *1st International Academic Conference on "WHY IT MATTERS"*. (2022)
3. Lancia M et al. A Novel E-Junction Lateral Flow Immunoassay for Widespread Sickle Cell Screening in Low and Middle-Income Countries. *IEEE Global Humanitarian Technology Conference (GHTC)*. (2020)