

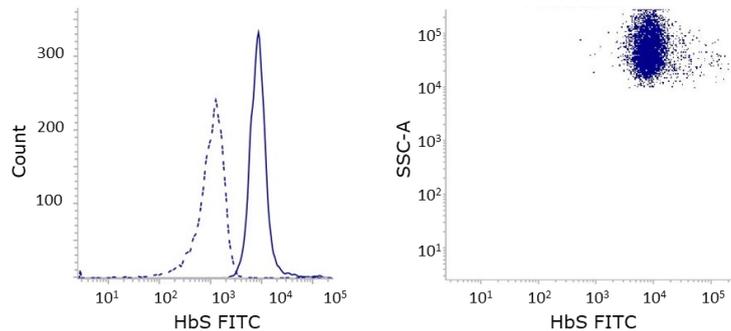
## NEW!

# Hemoglobin antibodies

We offer antibodies to detect various types of hemoglobin. Each antibody can be used individually or combined in a panel with anti-HbS FITC, anti-panHb APC and anti-HbF Dy-410 for three lasers, eliminating the need for compensation.

### Anti-hemoglobin S FITC

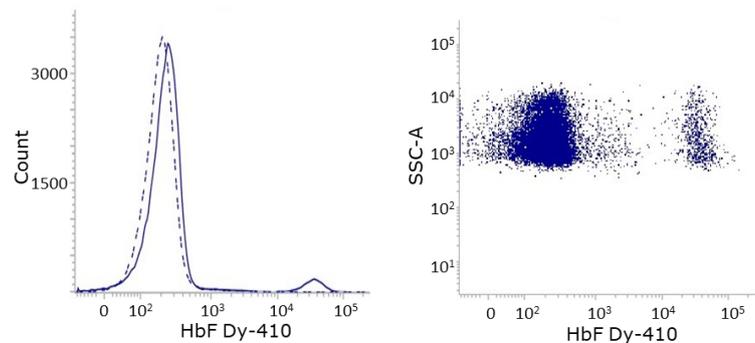
The antibody anti-hemoglobin S (HbS) recognizes the abnormal  $\beta$ -chain of hemoglobin S. Substitution of the amino acid valin for glutamic acid in the sixth position of the  $\beta$ -globin chain results in the formation of a  $\beta^S$  subunit. Due to the mutated subunit  $\beta^S$ , hemoglobin becomes unstable when no oxygen is bound, resulting in sickle shaped erythrocytes.



**Figure 1.** Flow cytometry analysis of whole blood stained with anti-hemoglobin S. Histograms: uninterrupted line represents HbS<sup>high</sup> sample, interrupted line represents normal blood

### Anti-hemoglobin F Dy-410\*

The antibody anti-hemoglobin F (HbF) recognizes the  $\gamma$ -chain of hemoglobin F (HbF). HbF is predominantly expressed by fetal erythrocytes and in some cases, HbF is also expressed by adult erythrocytes. These cells, so called F-cells, can represent up to 25 % of the total erythrocyte population.

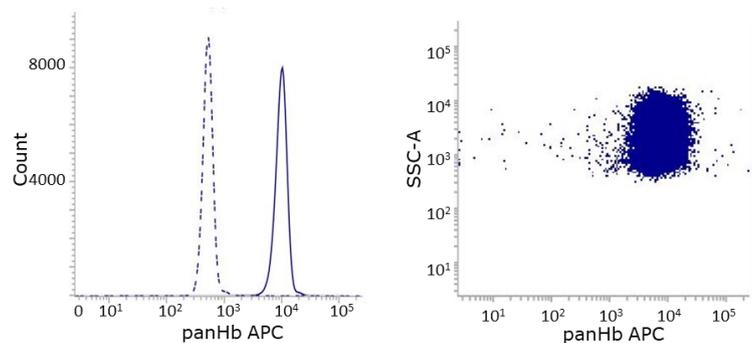


**Figure 2.** Flow cytometry analysis of whole blood stained with anti-hemoglobin F. Histograms: uninterrupted line represents stained sample, interrupted line represents blanc sample.

\*Dy-410 fluorochrome (ex. 405 nm / em. 460 nm)

### Anti-pan hemoglobin APC

The antibody anti-pan hemoglobin (panHb) recognizes the  $\alpha$ -chain of human hemoglobin. This antibody can be combined with other antibodies to determine the percentage of pathological forms of hemoglobin of the total hemoglobin content.



**Figure 3.** Flow cytometry analysis of whole blood stained with anti-pan hemoglobin. Histograms: uninterrupted line represents stained sample, interrupted line represents blanc sample.

## Dual staining anti-hemoglobin S and anti-hemoglobin F

In many cases, the anti-HbS and anti-HbF antibodies will be used in a combined staining.

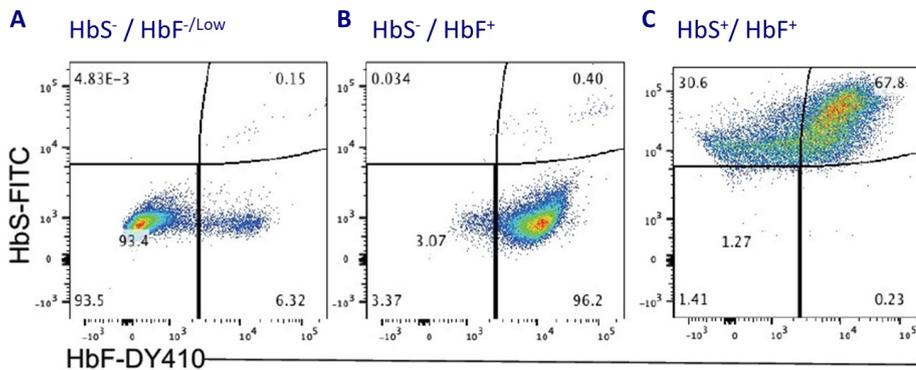


Figure 4. Dual staining with anti-HbF and anti-HbS. The staining was performed on (A) Normal blood, (B) Cord blood and (C) HbS<sup>+</sup> and HbF<sup>+</sup> blood. Sample A shows no staining with the anti-HbS antibody and a small population of HbF<sup>+</sup> cells, the F cells. Staining of sample B shows no signal with the anti-HbS antibody and a 96% HbF<sup>+</sup> population. The small population in the lower left quadrant reflects the initiated transition towards HbA in the new born. The anti-HbS antibody stained 98.4% of all red blood cells in sample C, with 67.8% being double positive for HbF.

## Complementary permeabilization reagent

### IQ Perm

IQ Perm can be used as a permeabilization buffer when working with the hemoglobin antibodies. It can be applied to fixed cells prior to antibody staining and subsequent analysis by flow cytometry. It utilizes Triton X-100 as the major active component that allows entry of antibodies and other probes. IQ Perm is suitable for permeabilization of both erythrocytes and leukocytes.

The optimal dilution of IQ Perm should be assessed for each cell type. For example, a 1:10 dilution of IQ Perm is often optimal for erythrocytes, whereas a 1:4 dilution is more suitable for leukocytes.

## Product details

Item	Clone	Description	Regulatory status	Package size	Product code
Anti-HbS FITC	57-8	Anti-hemoglobin S (HbS) antibody conjugated with fluorochrome FITC	ASR	1.0 mL (50 µg/mL)	IQP-574F
Anti-HbF1 Dy-410	WBAC HbF1	Anti-hemoglobin F (HbF1) antibody conjugated with fluorochrome Dy-410	ASR	1.0 mL (50 µg/mL)	IQP-567D
Anti-HbF1 FITC	WBAC HbF1	Anti-hemoglobin F (HbF1) antibody conjugated with fluorochrome FITC	ASR	1.0 mL (50 µg/mL)	IQP-567F
Anti-HbF1 R-PE	WBAC HbF1	Anti-hemoglobin F (HbF1) antibody conjugated with fluorochrome R-PE	ASR	1.0 mL (50 µg/mL)	IQP-567R
Anti-panHb APC	PHB1	Anti-pan hemoglobin (panHb) antibody conjugated with fluorochrome APC	ASR	1.0 mL (50 µg/mL)	IQP-575A
IQ Perm		Permeabilization solution	RUO	40 mL	IQP-350
<b>Related products</b>					
Item	Clone	Description	Regulatory status	Package size	Product code
Anti-RhD APC	BRAD3	Anti-RhD antibody conjugated with fluorochrome APC	RUO	1.0 mL (100 tests)	IQP-556A
Anti-RhD R-PE	NaTH109-1G2	Anti-RhD antibody conjugated with fluorochrome R-PE	RUO	1.0 mL (100 tests)	IQP-513R
CD71 FITC	DF1513	CD71 antibody conjugated with fluorochrome FITC	RUO	1.0 mL (100 tests)	IQP-152F
CD235a FITC	NAM10-6G4	CD235 antibody conjugated with fluorochrome FITC	RUO	1.0 mL (100 tests)	IQP-145F

**ASR** Analyte Specific Reagent; analytical and performance characteristics are not established. The product complies with the ASR definitions of the U.S. Food & Drug Administration (FDA).

**RUO** Research Use Only