Revision 1

#39386 Store at -20C

Hemoglobin γ (D4K7X) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, FC-FP	H	Endogenous	12	Rabbit IgG	#P69891	3047

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Flow Cytometry (Fixed/Permeabilized)	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

Hemoglobin γ (D4K7X) Rabbit mAb recognizes endogenous levels of the hemoglobin γ subunit. This antibody recognizes both HBG1 and HBG2 isoforms, but does not cross-react with the hemoglobin β subunit.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val21 of human hemoglobin γ (HBG1) protein.

Background

Hemoglobin (Hb, Hgb) is a heme-containing transport protein found primarily in the red blood cells of humans and most other vertebrates. The primary function of hemoglobin is to transport oxygen from the external environment to the body tissues. Hemoglobin also facilitates metabolic waste removal by assisting in the transport of carbon dioxide from tissues back to the respiratory organs (1). Mature hemoglobin is a tetrameric protein complex, with each subunit containing an oxygen-binding heme group (2). Multiple isoforms of hemoglobin exist, which vary in relative abundance depending on developmental stage. Adult hemoglobin (HbA) is comprised of two α subunits and two β subunits and is the predominant hemoglobin found in red blood cells of children and adults. Fetal hemoglobin (HbF) contains two α subunits and two γ subunits and is the predominant isoform found during fetal and early postnatal development (2,3). Mutations that alter the structure or abundance of specific globin subunits can result in pathological conditions known as hemoglobinopathies (4). One such disorder is sickle cell disease, which is characterized by structural abnormalities that limit the oxygen carrying capacity of red blood cells. By contrast, thalassemia disorders are characterized by deficiencies in the abundance of specific hemoglobin subunits (4). Clinical treatments that are designed to alter the expression of specific hemoglobin subunits can be used to treat hemoglobinopathies (5).

Background References

1. Hardison, R. (1998) *J Exp Biol* 201, 1099-117.
2. Sankaran, V.G. et al. (2010) *Br J Haematol* 149, 181-94.
3. Bank, A. (2006) *Blood* 107, 435-43.
4. Thein, S.L. (2013) *Cold Spring Harb Perspect Med* 3, a011700.
5. Fucharoen, S. et al. (1996) *Blood* 87, 887-92.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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