ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Hemoglobin (Hb; non-glycated) Protein and antibodies

☐ **Cat.** HEMG13-A	Rabbit anti-human hemoglobin (non-glycated) IgG, aff pure	**SIZE**: 100 ug
☐ **Cat.** HEMG13-C	Purified human hemoglobin protein control for WB	**SIZE**: 100 ul

Hemoglobin (also spelled haemoglobin and abbreviated Hb or Hgb) is the iron-containing oxygen-transport metalloprotein in the red blood cells of vertebrates and the tissues of some invertebrates. In mammals, the protein makes up about 97% of the red blood cell's dry content, and around 35% of the total content (including water). Hemoglobin transports oxygen from the lungs or gills to the rest of the body where it releases the oxygen for cell use. Deoxyhemoglobin is the form of hemoglobin without the bound oxygen.

In adult humans, the most common hemoglobin type is a tetramer (which contains 4 subunit proteins) called hemoglobin A, consisting of two non-covalently bound α and two β subunits (α2β2, 141 aa and 146 aa, ~17 Kda, 68 kda for tetramer).

Glycated hemoglobin (hemoglobin A1c, HbA1c, A1C, or Hb1c; sometimes also HbA1c) is formed in a non-enzymatic glycation pathway by hemoglobin's exposure to plasma glucose. A1c serves as a marker for average blood glucose levels over the previous months prior to the measurement. In diabetes mellitus, higher amounts of glycated hemoglobin, indicating poorer control of blood glucose levels, have been associated with cardiovascular disease, nephropathy, and retinopathy. Monitoring HbA1c in type 1 diabetic patients may improve outcomes.

Source of Antigen and Antibodies

Antigen	Purified human hemoglobin (non-glycated)
Ab Host/type	Rabbit, polyclonal IgG, aff pure, (**cat # HEMG13-A**) in PBS, pH 7.5, 0.1% BSA and 0.05% azide
2-ab	**Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)**
-ve control IgG	# 20011-1, Goat (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Purified human Hb protein (non-glycated) **for WB +ve control #HEMG13-C** is formulated in SDS-PAGE sample buffer (reduced). This preparation is biologically inactive. It is not suitable for ELISA or other applications where native protein is required. It is supplied in 100 ul/vial. For WB, heat once and load 10 ul/lane and visualize with appropriate antibodies (cat # **HEMG13**-A or other antibodies). This preparation is intended for qualitative purpose and not to serve as standard of known concentration. Store frozen in suitable aliquots. Do not freeze, thaw, or hear repeatedly.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

☐ 100 ug/100ul ☐ solution ☐ lyophilized powder

Supplied in **Buffer**: PBS+0.1% BSA

Reconstitute powder in PBS at 1mg/ml

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.

Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1-5 ug/ml for affinity pure IgG using ECL technique). ~17-18 Kda reduced.

ELISA: Control antigen can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Specificity & Cross-reactivity

HEMG13-A reacts with human hemoglobin. It may crossreact with Hb from other species. Antibody crossreactivity in various species is not confirmed. Purified Hb protein (#HEMG15-N-100) or ready to use Western control (cat # HEMG13-C) can be used as +ve control for western.

General References: Maton A. et al. (1993). Human Biology and Health. Englewood Cliffs, New Jersey, USA: ISBN 0-13-981176-1; Dominguez de Villota E.D. et al. (1981) Br. J. Anaesth., 53, 1325–1328; Costanzo L. S. (2007) Physiology. Hagerstwon, MD: Lippincott Williams & Wilkins. ISBN 0-7817-7311-3; Perutz M.F. et al. (1960) Nature, 185,416–422; Jintaridth P. et al. (2006) Int. J. Hematol., 83, 408-414; Gan Y.Y. et al. (1996) Ann. Acad. Med. Singapore, 25, 75-78.

*This product is for in vitro research use only.

Related material available from ADI

Catalog#	ProdDescription
HEMG11-A	Anti-Human+Rat Hemoglobin IgG/Y
HEMG13-A	Anti-human hemoglobin (non-glycated) IgG, aff pure
HEMG14-A	Anti-Human Hemoglobin (non-glycated) IgG, aff pure
HEMG15-N-100	Purified Human Hemoglobin
HEMG16-N-1	Purified Rat Hemoglobin
HEMG17-N-1	Purified Mouse Hemoglobin
HEMG18-N-1	Purified fetal calf/bovine Hemoglobin

HEMG13-A 140514A

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