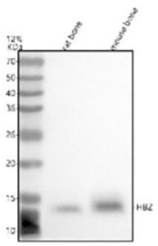
HBZ Antibody / Hemoglobin zeta (FY12297)

Catalog No.	Formulation	Size
FY12297	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P02008
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This HBZ antibody is available for research use only.



Western blot analysis of HBZ using anti-HBZ antibody. Lane 1: rat bone tissue lysates, Lane 2: mouse bone tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-HBZ antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. Expected molecular weight of Hemoglobin subunit zeta (HBZ) ~16 kDa (142 aa). On SDS-PAGE/Western blot, HBZ typically migrates at ~13â€“14 kDa due to its compact globin structure and atypical SDS binding. The observed band just below the 15 kDa marker is consistent with published reports for zeta-globin.

Description

HBZ antibody detects Hemoglobin subunit zeta, encoded by the HBZ gene on chromosome 16p13.3. HBZ antibody is widely used in hematology, developmental biology, and globin gene regulation research. Hemoglobin zeta is an embryonic alpha-like globin expressed during early development in yolk sac-derived erythrocytes. It participates in embryonic hemoglobins (Hb Portland-1 and Hb Portland-2) that provide oxygen transport before fetal hemoglobins are

expressed. Expression of HBZ is normally silenced after embryonic development as gamma and beta globins become dominant.

Structurally, Hemoglobin zeta is a ~16 kDa globin protein that forms heterotetramers with epsilon and gamma globins during early development. Its globin fold binds heme, enabling reversible oxygen binding. The protein sequence is highly homologous to alpha globin, reflecting its evolutionary relationship. Despite being developmentally restricted, HBZ can be re-expressed in certain pathologies.

Functionally, Hemoglobin zeta provides oxygen transport in the embryonic circulation and supports survival of primitive erythrocytes. Its transient expression is essential for early development. Researchers use HBZ antibody to investigate globin gene switching, embryonic hematopoiesis, and hemoglobinopathies.

Clinically, persistence of Hemoglobin zeta expression has been observed in some alpha-thalassemias and hematological malignancies. HBZ reactivation may contribute to altered oxygen transport or serve as a biomarker of erythroid stress. Genetic disorders affecting HBZ expression impact early embryonic viability. NSJ Bioreagents provides HBZ antibody for developmental hematology and globin research.

Experimentally, HBZ antibody is used in western blotting to detect the ~16 kDa protein, in immunohistochemistry to study embryonic tissue expression, and in ELISA to quantify hemoglobin zeta in blood samples. Molecular assays with HBZ antibody support studies of globin gene regulation.

Application Notes

Optimal dilution of the HBZ antibody should be determined by the researcher.

Immunogen

E.coli-derived human HBZ recombinant protein (Position: D48-R142) was used as the immunogen for the HBZ antibody.

Storage

After reconstitution, the HBZ antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.