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Polyclonal Antibody to TET2 - Aff - Purified

Alternate names: KIAA1546, Methylcytosine dioxygenase TET2

Catalog No.: TA311188

Quantity: 0.1 mg

Concentration: 0.5 mg/ml

Background: TET2 is frequently mutated in myelodysplastic syndromes, a heterogeneous group of closely related clonal hematopoietic disorders. All are characterized by a hypercellular or hypocellular bone marrow with impaired morphology and maturation, dysplasia of the myeloid, megakaryocytic and/or erythroid lineages, and peripheral blood cytopenias resulting from ineffective blood cell production. Included diseases are: refractory anemia (RA), refractory anemia with ringed sideroblasts (RARS), refractory anemia with excess blasts (RAEB), refractory cytopenia with multilineage dysplasia and ringed sideroblasts (RCMD-RS). Chronic myelomonocytic leukemia (CMML) is a myelodysplastic/myeloproliferative disease. Myelodysplastic syndromes are considered a premalignant condition in a subgroup of patients that often progresses to acute myeloid leukemia (AML). Bone marrow samples from patients display uniformly low levels of hmC in genomic DNA compared to bone marrow samples from healthy controls as well as hypomethylation relative to controls at the majority of differentially methylated CpG sites. It Catalyzes the conversion of methylcytosine (5mC) to 5-hydroxymethylcytosine (hmC). Plays an important role in myelopoiesis. The clear function of 5-hydroxymethylcytosine (hmC) is still unclear but it may influence chromatin structure and recruit specific factors or may constitute an intermediate component in cytosine demethylation.
TET2 is Broadly expressed. Highly expressed in hematopoietic cells; highest expression observed in granulocytes. Expression is reduced in granulocytes from peripheral blood of patients affected by myelodysplastic syndromes.

Uniprot ID: Q6N021

NCBI: NP_001120680.1

GeneID: 54790

Host: Goat

Immunogen: Peptide with sequence from the internal region of the protein sequence according to NP_001120680.1 and NP_060098.3.
Genename: TET2
AA Sequence:
C-PHPQSNNDQQREGSF

Format: **State:** Liquid purified Ig fraction
Purification: Ammonium Sulphate Precipitation followed by antigen Affinity Chromatography using the immunizing peptide
Buffer System: Tris saline, pH~7.3 with 0.02% Sodium Azide and 0.5% BSA

Applications:

Peptide ELISA: 1/16000 (Detection Limit).
Immunohistochemistry on Paraffin Sections: 2-6 µg/ml.
In paraffin embedded Human Spleen shows nuclear staining in select splenocytes.
This antibody has also been used successfully on Human Brain sections (See Orr et al, PLoS One. 2012;7(7):e41036. 2012 Jul 19. PMID: 22829908).
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

This antibody is expected to recognize both reported isoforms (NP_001120680.1 and NP_060098.3).

Species Reactivity:

Tested: Human.
Expected from sequence similarity: Mouse and Canine (Dog).

Storage:

Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

Product Citations:

Originator or purchased from resellers:
1. Orr BA, Haffner MC, Nelson WG, Yegnasubramanian S, Eberhart CG. Decreased 5-hydroxymethylcytosine is associated with neural progenitor phenotype in normal brain and shorter survival in malignant glioma. PLoS One. 2012;7(7):e41036. doi: 10.1371/journal.pone.0041036. Epub 2012 Jul 19. PubMed PMID: 22829908.

General Readings:

1. Langemeijer SM, Kuiper RP, Berends M, Knops R, Aslanyan MG, Massop M, et al. Acquired mutations in TET2 are common in myelodysplastic syndromes. Nat Genet. 2009 Jul;41(7):838-42. doi: 10.1038/ng.391. Epub 2009 May 31. PubMed PMID: 19483684.

Pictures:

TA311188 (4 ug/ml) staining of paraffin embedded Human Spleen. Steamed antigen retrieval with citrate buffer pH 6, HRP-staining.