ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Apobec-1 Complementation Factor (ACF) Antibodies

Cat. # ACF11-P	Human ACF Control/blocking peptide # 1	**SIZE**: 100 ug
Cat. # ACF11-A	**Rabbit** Anti-Human ACF IgG # 1 (aff pure)	**SIZE**: 100 ug

RNA editing is an important mechanism for regulating genetic plasticity through the generation of alternative protein products from a single structural gene. Substitutional RNA editing employs a variety of genetic mechanisms, the biochemical basis of which has been elucidated following the development of *in vitro* assays that recapitulate important elements of this process. There are two types of substitutional RNA exist in mammals, namely A-to-I and C-to-U RNA editing. The best-characterized example of C-to-U RNA editing involves the nuclear transcript encoding intestinal apolipoprotein B (apo B)). Apo B RNA editing changes a CAA to a UAA stop codon, generating a truncated protein, apoB48. The functional complex includes a minimal core composed of apobec-1 and ACF, that function as an adaptor protein by binding both the deaminase and the RNA substrate. The RNA binding proteins also include CUGBP2 which along with Apobec-1 binds to the consensus binding sequence UUUN (A/U) U, present in c-myc, VEGF and Cyclooxygenase-2 (COX2).

ACF (apobec-1 complementation factor or APOBEC1-stimulating protein) exists in 6 isoforms. Major isoforms is isoform 2.

Isoforms 1	594-aa	gene accession # Q9NQ94
Isoforms 2	594-aa	Missing 381-388
Isoforms 3	594-aa	Missing 1-84, 1-33 changed; Missing 381-388
Isoforms 4	594-aa	1-33 changed; Missing 381-388
Isoforms 5	594-aa	Missing 1-84
Isoforms 6	594-aa	Missing 202-256

The isoform 3 is a 594aa protein (65kD), when added with apobec-1 it reconstitute the editing of an apo B mRNA template. It is found to co-localize with apobec-1 and CUGBP2. It was demonstrated that CUGBP2 co-fractionates with ACF in bovine liver S-100 extracts and that its distribution in the most enriched fractions closely matches with ACF, thus leading to the assembly to apo B holoenzyme. SUBCELLULAR LOCATION: Nucleus. Endoplasmic reticulum (By similarity). Cytoplasm. Note=Predominantly nuclear where it localizes to heterochromatin. Also cytoplasmic where it is found at the outer surface of the endoplasmic reticulum (By similarity). Shuttles between the nucleus and cytoplasm. May be transported into the nucleus by the nuclear import protein TNPO2/TRN2 or by APOBEC1.

Source of Antigen and Antibodies

Antigen	17-aa peptide from Human **ACF** (gene accession # Q9NQ94, refs 1); **Designation (ACF11-P, control peptide**) conjugated to KLH
Location	~C-terminus
Ab Host/type	Rabbit, Polyclonal Aff pure IgG (**cat # ACF11-A**) purified over antigen-agarose column
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	**# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control**

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

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/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 (1-10 ug/ml for affinity pure antibody using ECL technique).

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

Histochemistry & Immunofluorescence: Not tested. We recommend the use of aff pure IgG at 2-20 ug/ml.

Specificity & Cross-reactivity

The ACF11-P control peptide is 100% conserved in rat (isoforms-1-2), mouse (isoforms 2) and human (isoforms 1-6,) and 88% in frog ACF. Since ACF11-P is located at the C-terminus, the antibodies are likely to react with most ACF isoforms 1-6. Antibody cross-reactivity in various species or isoforms has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: www.4adi.com\data\abblock.html).

General References: Shrikant Anant et al (2001) JBC, Vol. 276, No: 50, 47338-47351; Duanxiang Li et al (2001) Genomics 74, 396-401; Lu X et al (1999) Hum. Mol. Genet. 8 (1), 53-60; Fujino, T. et al (1998) Genomics 47 (2), 266-275.

*This product is for In vitro research use only.

Related material available from ADI

Antibodies for CUGBP2, Apobec-1, ACF, VEGF, COX1, COX2, COX3 etc..

ACF11-A-P 70807A

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