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Antibodies to Diagnostic protein markers

Anti-Alfa-Methylacyl-CoA recemase (AMCR) antibodies (AMCR-101AP and AMCR-112AP)

A mitochondrial and peroxisomal enzyme, Alpha-methylacyl-CoA racemase (AMCAR), an enzyme involved in beta oxidation of branched chain fatty acids and bile salt intermediates, and is recently identified as a neomarker for prostate cancer. The AMCAR is over expressed in prostate cancer. Several different isoforms have been reported that are produced either by extensive alternative splicing of 5 exons or by use of alternate initiation codons. At least 2 different transcripts each derived from the 5 exons have been reported, AMCAR I and AMCAR II. The AMCAR I is the most abundant form and encodes for a 382 amino acid protein (42kDa) with a PI of 6.0. The other isoform AMCAR II has an alternative fifth exon that exhibit significant homology to fumarate hydratase and encodes a 288 amino acid protein with a molecular weight of 32 kDa, PI 9.6. Several other variants of IA and IIA isoforms are characterized recently (1). The variant lack exon 3 are designated as IB and IIB. In prostate tumor tissues that overexpressed AMCAR, both the A and B forms are over-expressed. The predominant isoform AMCAR IA also has a peroxisomal targeting signal peptide (PTS1), while other variants are basic in PI and lack the PTS1.

Carcinomas of the transition zone (TZ) constitute approximately 20% of all prostate cancers. The TZ is the site of origin of grade 1 and grade 2 cancers, the most well-differentiated of the Gleason grade tumors, as well as for benign prostatic hyperplasia (BPH). AMCAR has been proposed as a new molecular marker for prostate cancer, because the enzyme is reportedly overexpressed in high-grade dysplasias, also termed prostatic intraepithelial neoplasia, a purported precursor of prostatic carcinoma, and in all grades of prostatic carcinoma of the peripheral zone (3). Small interference RNA (siRNA) against AMCAR, but not the control inverted siRNA, reduced the expression of AMCAR and significantly impaired proliferation of the androgen-responsive PCa cell line LAPC-4 (2) suggesting that AMCAR is essential for optimal growth of PCa cells in vitro and that this enzyme has the potential to be a complementary target with androgen ablation in PCa treatment.

Two Anti-AMCAR-selective antibodies were generated using unique peptides from the AMCAR protein. The antibody AMCR-101AP has unique epitope that is present on AMCAR I and II variants while AMCR-112AP is directed against AMCAR I. The AMCAR-selective antibodies were affinity purified against immobilized antigen based affinity chromatography and are represented as pure IgG fractions stabilized in antibody stabilization buffer. The polyclonal antibodies strongly label a 32 and 42 kDa AMCAR I and II variants in PC-AMCR samples. The AMCAR antibodies can be conjugated as HRP or alkaline conjugates for IHC, Confocal, WB analyses at nominal price. *FabGennix Inc.* will also conjugate antibodies with fluorescent probes upon request at extra charge. *FabGennix Inc.* also provides antibodies against other diagnostic/neomarkers, the list of these antibodies can be obtained at www.FabGennix.com under Antibodies to diagnostic markers. Limited quantities of antigens are also available. Please enquire for their availability before ordering.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	Price
AMCR-101AP	Rabbit	Affinity purified near N-terminal antibody	R, M, H	100 µg	225
AMCR-112AP	Rabbit	Affinity purified Antibody near C-terminal	R, M, H	100 µg	225
PC-AMCR	n/a	Western blot positive control	n/a	5 appl	195
P-AMCR101	n/a	Antigenic blocking peptide for AMCR-101AP	n/a	250 ug	120
P-AMCR112	n/a	Antigenic blocking peptide for AMCR-112AP	n/a	250 ug	135

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

Immunogen: Synthetic peptides (for AMCR-101AP: **gaa vlr rlc krs dvl lep f r** and for AMCR-112AP **tda cvt pvl tf eev vhh d(c)**). Peptide AMCR-112AP was modified post-synthesis. Peptide AMCR112 is a cyclic peptide.

Concentration: AMCR-101AP and AMCR-112AP = 0.75-0.95 mg/ml of antibody stabilization buffer

Applications: Antibody AMCR-112AP is ideal for IMM, WB, IHC and confocal assays. The AMCR-101AP does not work well with IHC. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay in his/her laboratory. Other applications have not been tested.

Suggested Dilutions: Western blotting: > 1:500; Immunoprecipitation & i.p pull-down assays: 1> 1:200; IHC for AMCR-112AP 1:100.

Protocols: Standard protocol for various applications (Western blot; immunoprecipitation and immunohistochemistry) of this antibody is provided with the product specification sheet, however, FabGennix Inc. strongly recommends investigators to optimize conditions for use of this antibody in their laboratories.

References:

1. Mubiru JN, Shen-Ong GL, Valente AJ, Troyer DA. Gene. 2004 Feb 18;327(1):89-98.
2. Zha S, Ferdinandusse S, Denis S, Wanders RJ, Ewing CM, Luo J, De Marzo AM, Isaacs WB. Cancer Res. 2003 Nov 1;63:7365-76.
3. Leav I, McNeal JE, Ho SM, Jiang Z. Alpha-methylacyl-CoA racemase (P504S) expression in evolving carcinomas within benign prostatic hyperplasia and in cancers of the transition zone. Hum Pathol. 2003 Mar;34(3):228-33. Related Articles, Links

* For users who may require large amounts of AMCR-101AP and AMCR-112AP, please enquire about bulk material discounts.

This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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