

## RUO DATA SHEET

# ACSL4

Concentrated Rabbit Monoclonal Antibody

### Intended Use:

For Research Use Only (RUO)

Epitomics' Rabbit Monoclonal Anti-Human ACSL4, Clone EP386, is intended for use to qualitatively identify ACSL4 by light microscopy in sections of formalin-fixed, paraffin-embedded tissue using immunohistochemical detection methodology.

Catalog number	Description	Dilution
AC-0345RUO	0.1 ml, concentrated	1:60
AC-0345RUOB	0.5 ml, concentrated	1:60
AC-0345RUOC	1 ml, concentrated	1:60
AC-0345RUOBULK	2 ml or more, concentrated	1:60

**Immunogen:** A synthetic peptide corresponding to residues of human ACSL4 protein

**Source:** Rabbit Monoclonal Antibody

**Clone ID:** EP386

**Isotype:** Rabbit IgG

**Application:** Immunohistochemistry for formalin-fixed paraffin-embedded tissue

### Summary and Explanation:

The long-chain-fatty-acid--CoA ligase 4 (ACSL4) is a fatty acid synthetase that uses arachidonic and eicosapentaenoic acids as substrates. Inhibitor studies also indicate ACSL4 involvement of triacylglycerol synthesis in the liver. ACSL4 is essential for normal development and reproduction, and its mRNA is highly expressed in placenta, brain, testis, ovary, spleen and adrenal gland. Intracellularly, ACSL4 is localized in the cytoplasm with peroxisomes and mitochondria.

Since altered expression of lipid metabolic enzymes is a feature of a variety of cancers, several *in vitro* and *in vivo* studies demonstrated inhibition of the ACSL4 in inhibiting growth and survival of cancer cells. ACSL4 is overexpressed in colon and liver carcinoma specimens compared against benign colon and liver. Furthermore, ACSL4 was reported to be inversely correlated with sex steroid receptor (ER and AR) expression in breast and prostate carcinomas. The inverse correlation was indicative of resistance to hormone-based treatment in these tumors. ACSL4 expression was highest in triple-negative breast cancer cell lines and tumors that lacked AR expression. In ER-negative breast tumors, high ACSL4 expression predicted a shorter time to distant metastasis.

### Reagent Provided:

Antibody to ACSL4 is affinity purified and diluted in 10 mM phosphate buffered saline (PBS), pH 7.2 containing 1% bovine serum albumin (BSA) and 0.09% sodium azide (NaN<sub>3</sub>).

### Storage and Stability:

Store at 2-8 °C. Do not use after expiration date provided on the vial. End user must validate any storage conditions other than those specified.

### Procedures Recommended:

- 1. Pretreatment:** Epitope retrieval using Tris/EDTA buffer (catalog #: SP-0004) with a pressure cooker.
- 2. Endogenous peroxidase block:** Block for 10 minutes at room temperature using peroxidase solution (catalog #: SP-0002).
- 3. Protein block:** Block for 10 minutes at room temperature using blocking solution (catalog #: SP-0003).
- 4. Primary antibody:** Incubate for 30 minutes.
- 5. Detection:** Follow instructions from the selected detection system (EpiPrecision™, a Biotin Streptavidin-HRP Detection, catalog #: DK-0001, 0003, or EpiVision™, a Rabbit Polymer Detection, catalog # DK-0002, 0004).

The antibody dilution and protocol may vary depending on the specimen preparation and specific application. Optimal conditions should be determined by the individual laboratory.

### Performance Characteristics:

This antibody gives cytoplasm staining in positive cells. The recommended positive controls are kidney for normal tissue and hepatocellular carcinoma for abnormal tissue.

### Limitations:

Immunohistochemistry is a complex process. Variation in tissue selection, tissue processing, antigen retrieval, peroxidase activity, detection systems and improper counterstaining may cause variation in results.

### References:

1. Monaco ME, et al.: *Transl Oncol*. 2010;3(2):91-8.
2. Orlando UD, et al.: *Oncotarget*. 2015;6(40):42632-50.
3. Wu X, et al.: *PLoS One*. 2013;8(10):e77060.
4. Wu X, et al.: *Oncotarget*. 2015;6(42):44849-63.

