

Rabbit Anti-2SC/S-(2-succino)cysteine Polyclonal: RC0334-0.1ML

Intended Use: For Research Use Only

Description: Succination is a stable post-translational modification of cysteine residues, which modifies protein function or turnover in response to a changing intracellular redox environment. Succination occurs when the Krebs cycle intermediate, fumarate, reacts with cysteine yielding S-(2-succino)cysteine (2SC). 2SC therefore serves as a biomarker of mitochondrial stress or dysfunction in chronic diseases, such as obesity, diabetes, and cancer. Fumarate hydratase (FH)-deficient renal cell carcinoma is an aggressive neoplasm driven by inactivating mutations of the FH gene, which cause metabolites like 2SC to accumulate and trigger cascades supporting malignant transformation. Combining FH loss and positive 2SC staining is a diagnostic approach, particularly in the context of FH-deficient renal cell carcinoma (FHdRCC) and Hereditary Leiomyomatosis and Renal Cell Carcinoma (HLRCC). FHdRCC, a rare and aggressive subtype of RCC, is characterized by a functional loss of the FH gene, which leads to the accumulation of fumarate, which reacts with cysteine to form 2SC, a byproduct that can be detected with immunohistochemistry (IHC). FHdRCC and HLRCC, a genetic predisposition to FHdRCC and other related tumors, can be identified by IHC with anti-FH antibodies, which will be negative in FH-deficient cells, and anti-2SC antibodies, which will be positive in FH-deficient cells.

Specifications:

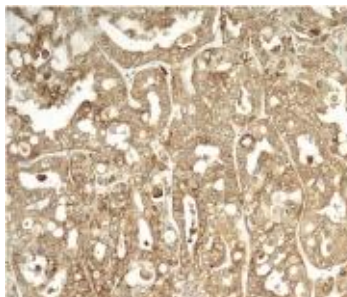
Clone:	Polyclonal
Source:	Rabbit
Isotype:	IgG
Reactivity:	Human, rat
Immunogen:	KLH conjugated 2SC protein
Localization:	Cytoplasm, nucleus
Formulation:	Purified antibody in PBS pH7.4, containing BSA and ≤ 0.09% sodium azide (NaN ₃)
Storage:	Store at 2°- 8°C
Applications:	IHC, ELISA, WB
Package:	

Description	Catalog No.	Size
2SC/S-(2-succino)cysteine Polyclonal Concentrated	RC0334-0.1ML	0.1 ml

IHC Procedure*:

Positive Control Tissue:	FH-deficient RCC, uterine leiomyoma
Concentrated Dilution:	200-1000
Pretreatment:	Citrate pH6.0 15 minutes Pressure Cooker or 30-60 minutes water bath at 95°-99°C
Incubation Time and Temp:	30-60 minutes @ RT
Detection:	Refer to the detection system manual

* Result should be confirmed by an established diagnostic procedure.



FFPE human FH-deficient RCC stained with anti-2SC Polyclonal using DAB

References:

1. Stimulator of interferon genes (STING) immunohistochemical expression in fumarate hydratase-deficient renal cell carcinoma: biological and potential predictive implications. Marletta, S., et al. Intl Journal of Pathology. 3 Feb. 2025.
2. Comparison of 2SC, AKR1B10, and FH Antibodies as Potential Biomarkers for FH-deficient Uterine Leiomyomas. Terhi Ahvenainen, et al. Wolters Kluwer Health. 2022.