

ERCC1

Format	CatalogNo.	Pack size	Dilution
Concentrated	GB3147A,B	0.1 mL	1:100
Prediluted	-	-	-

PRODUCT DESCRIPTION -

The excision repair cross-complementation group 1 (ERCC1) gene encodes a protein essential for nucleotide excision repair and inter-strand crosslink repair of DNA. Chemotherapeutic agents that induce DNA damage, such as cisplatin, are frequently employed for non-small cell lung carcinoma and other advanced cancers; however, they exhibit significant resistance and considerable adverse effects. Resistance to platinum-based chemotherapy is associated with increased levels of ERCC1-XPF nuclease, suggesting that ERCC1 may serve as a possible predictive diagnostic biomarker. The expression of ERCC1 may possess prognostic significance in lung, colorectal, head & neck, bladder, breast, and cervical malignancies.

While clone 8F1 has been conventionally employed in immunohistochemistry to identify ERCC1 expression, it has been discovered that 8F1 cross-reacts with PCYT1A, an unrelated nuclear membrane protein. Clone 4F9 exhibits no cross-reactivity, hence ensuring enhanced specificity for ERCC1 expression.

INTENDED USE -

Intended for In Vitro Diagnostic Applications ERCC1 [4F9] is a mouse monoclonal antibody designed for laboratory application in the qualitative detection of ERCC1 protein using immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical assessment of any staining or its absence must be supplemented by morphological analyses with appropriate controls and should be considered in conjunction with the patient's clinical history and other diagnostic evaluations by a certified pathologist.

SUMMARY AND EXPLANATION -

The excision repair cross-complementation group 1 (ERCC1) gene encodes a protein essential for nucleotide excision repair and interstrand crosslink repair of DNA. Chemotherapeutic agents that induce DNA damage, such as cisplatin, are frequently employed for non-small cell lung carcinoma and other advanced malignancies; however, they exhibit significant resistance and considerable adverse effects. Resistance to platinum chemotherapeutic agents has been associated with

increased levels of ERCC1-XPF nuclease, positioning ERCC1 as a possible predictive diagnostic biomarker. The expression of ERCC1 may possess prognostic significance in lung, colorectal, head & neck, bladder, breast, and cervical malignancies. Despite its conventional application in immunohistochemistry for detecting ERCC1 expression, clone 8F1 has been shown to cross-react with PCYT1A, an unrelated nuclear membrane protein. Clone 4F9 has no cross-reactivity, hence demonstrating enhanced specificity for ERCC1 expression.

PRINCIPLE OF PROCEDURE -

Antigen detection in tissues and cells is a multi-step immunohistochemistry procedure. The first step attaches the primary antibody to its designated epitope. Following the tagging of the antigen with a primary antibody, a secondary antibody is introduced to attach to the primary antibody. An enzyme label is subsequently introduced to attach to the secondary antibody; the detection of the attached antibody is shown by a colorimetric reaction.

SOURCE - Mouse monoclonal

SPECIES REACTIVITY - Human; others not tested

CLONE - 4F9

ISOTYPE - IgG1

PROTEIN CONCENTRATION - ~10 mg/ml. Call for lot specific Ig concentration.

EPITOPE/ANTIGEN - Protein expressed in 293T cell transfected with human ERCC1 expression vector

CELLULAR LOCALISATION - Nuclear, cytoplasmic

POSITIVE TISSUE CONTROL - Prostate or prostate cancer

KNOWN APPLICATIONS-Immunohistochemistry 30-40 min. At RT. Staining of formalin-fixed tissues requires heating tissue sections in between pH 7.4 - 9.0 for 45 min at 95°C followed by cooling at room temperature for 20 minutes.

SUPPLIED AS - Buffer with protein carrier and preservative

STORAGE AND STABILITY -

Store at 2°C to 8°C. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

Materials required but not provided -

- 1) Positive tissue control-Prostate or prostate cancer
- 2) Negative control tissue (internal or external)
- 3) Microscope slides and coverslips
- 4) Staining jars or baths
- 5) Timer
- 6) Xylene or xylene substitute
- 7) Ethanol or reagent alcohol
- 8) Deionized or distilled water
- 9) Heating equipment or enzyme for tissue pretreatment step
- 10) Detection system
- 11) Chromogen
- 12) Wash buffer
- 13) Hematoxylin
- 14) Antibody diluents
- 15) Peroxide block
- 16) Light microscope
- 17) Mounting medium

LIMITATIONS-

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Genebio products. Ultimately, it is the responsibility of the investigator to determine optimal conditions.