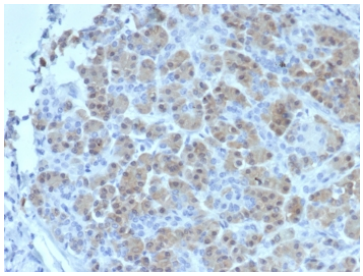
BRCA2 Antibody / Homologous Recombination DNA Repair Marker [clone BRCA2/2158] (V4319)

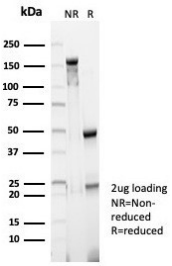
Catalog No.	Formulation	Size
V4319-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4319-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4319SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	BRCA2/2158
Purity	Protein A/G affinity
UniProt	P51587
Localization	Nucleus, Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 minutes at RT
Limitations	This BRCA2 Antibody / Homologous Recombination DNA Repair Marker is available for research use only.



BRCA2 Antibody Salivary Gland IHC. Immunohistochemistry analysis of FFPE human salivary gland tissue using BRCA2 antibody clone BRCA2/2158. Glandular epithelial cell nuclei demonstrate HRP-DAB brown staining consistent with the chromatin-associated localization of BRCA2 in homologous recombination repair, genomic stability maintenance, and DNA damage-response signaling pathways. Nuclei are counterstained blue. Heat-induced epitope retrieval was performed by boiling tissue sections in pH9 10 mM Tris with 1 mM EDTA for 20 minutes followed by cooling prior to staining.



SDS-PAGE analysis of purified, BSA-free BRCA2 antibody (clone BRCA2/2158) as confirmation of integrity and purity.

Description

BRCA2 antibody recognizes Breast cancer type 2 susceptibility protein, a large chromatin-associated tumor suppressor encoded by the BRCA2 gene that functions as a critical regulator of homologous recombination-mediated DNA repair and genomic stability maintenance. BRCA2 antibody, also referred to as Breast cancer susceptibility protein 2 antibody and FANCD1 antibody in the literature, is widely used in studies of hereditary cancer biology, DNA double-strand break repair, and replication stress signaling. BRCA2 is primarily localized within the nucleus where it coordinates recruitment and stabilization of RAD51 recombinase complexes during homologous recombination repair.

BRCA2 is located on chromosome 13q13.1 and encodes a multifunctional protein containing multiple BRC repeat domains that mediate interaction with RAD51 and other DNA repair machinery components. Through these interactions, BRCA2 regulates homologous recombination, replication fork protection, and maintenance of chromosomal integrity during DNA replication and genotoxic stress. BRCA2 also participates in Fanconi anemia pathway signaling and contributes to stabilization of stalled replication forks, helping prevent chromosomal rearrangements and accumulation of DNA damage.

The BRCA2 Antibody / Homologous Recombination DNA Repair Marker format is especially relevant for investigations of genomic instability pathways, hereditary cancer susceptibility, and DNA damage response signaling. Germline BRCA2 mutations are strongly associated with hereditary breast cancer, ovarian cancer, prostate cancer, pancreatic cancer, and Fanconi anemia. Functional loss of BRCA2 contributes to homologous recombination deficiency, impaired RAD51 loading, and increased sensitivity to PARP inhibition and platinum-based chemotherapeutic agents.

BRCA2 expression is commonly observed in proliferative epithelial tissues and actively cycling cell populations where coordinated DNA repair activity is required to preserve genomic fidelity. Following DNA strand break formation or replication stress, BRCA2 promotes assembly of repair complexes at damaged chromatin regions and facilitates accurate repair of double-strand breaks through homologous recombination mechanisms. Defects in BRCA2 signaling are associated with chromosomal instability, replication stress accumulation, and tumor progression in multiple malignancies.

BRCA2 also interacts functionally with BRCA1, PALB2, RAD51, and Fanconi anemia pathway proteins to coordinate repair pathway activation and checkpoint signaling during cell cycle progression. Because BRCA2 functions at a central point within homologous recombination repair pathways, it has become an important biomarker in studies of genomic maintenance, hereditary tumor syndromes, and targeted cancer therapy response.

Clone BRCA2/2158 is useful for investigating nuclear BRCA2 expression patterns in cancer tissue, homologous recombination signaling, and chromatin-associated DNA repair biology. This antibody supports studies focused on DNA repair pathway regulation, genomic instability mechanisms, and hereditary cancer-associated molecular signaling in normal and malignant tissues.

Explore additional oncology and DNA repair pathway targets in our Cancer Marker Antibodies collection featuring biomarkers involved in homologous recombination, genomic instability, and hereditary cancer signaling.

Application Notes

Optimal dilution of the BRCA2 Antibody / Homologous Recombination DNA Repair Marker should be determined by the

researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 200-500) from the human protein was used as the immunogen for the BRCA2 antibody.

Storage

Aliquot the BRCA2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

BRCA2 DNA repair antibody, Breast cancer susceptibility protein 2 antibody, FANCD1 antibody, BRCC2 antibody, BRCA2 homologous recombination antibody, BRCA2 tumor suppressor antibody