

## Product Information

### MONOCLONAL ANTI-BAP1 (BRCA1 ASSOCIATED PROTEIN 1) CLONE 3c11 Mouse Ascites Fluid

Product Number **B9303**

#### Product Description

Monoclonal Anti-BAP1 (BRCA1 Associated Protein 1) (mouse IgG1 isotype) is derived from the 3C11 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a recombinant full-length BAP1. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-BAP1 (BRCA1 Associated Protein 1) recognizes an epitope within the region of amino acids 337-440 of the human BAP1 molecule. The antibody may be used for immunoblotting (approx. 81 kDa, and additional lower and higher m.w. bands), immunoprecipitation and immunocytochemistry.

Breast and ovarian cancers are the most common diseases affecting women, making the early detection of these fatal diseases a high priority in their medical management. Germline mutations in 17q21 *BRCA1*, breast cancer susceptibility gene, appear to account for approximately half of familial breast cancers and essentially all families with 17q21-linked inherited susceptibility to ovarian and breast cancer.<sup>1-3</sup> A second locus, *BRCA2* mapped to chromosome arm 13q, appears to account for a proportion of early-onset breast cancer roughly equal to that resulting from *BRCA1*. Unlike *BRCA1*, however, *BRCA2* may not influence ovarian cancer risk. Like many other genes involved in familial cancer, *BRCA1* appears to encode a tumor suppressor, a protein that acts as a negative regulator of tumor growth. Cancer-predisposing alleles typically carry mutations that cause loss or reduction of gene function.<sup>1</sup> The BRCA1 protein (210 kDa and alternatively spliced/processed variants of 185, 160, 135 and 85 kDa)<sup>4,5</sup> is a nuclear protein in cultured cells and normal tissues, although a cytoplasmic localization is also

reported. It includes an N-terminal RING domain, a negatively charged region in its C-terminal, and a C-terminal acidic domain, partially homologous to yeast RAD9 and to a cloned p53 binding protein.<sup>6</sup> The developmental pattern of murine *BRCA1* expression and its cell cycle-regulated expression, suggest a relationship between BRCA1 function and cellular proliferation.<sup>6</sup> The abundance and intracellular location of BRCA1 varies with the cell cycle; BRCA1 protein levels are low in G<sub>1</sub>, when it is detected as a diffuse immunofluorescent staining throughout the nucleus, and reach a maximum during S phase, when it is localized in the discrete nuclear domains.<sup>7</sup> BRCA1 undergoes cell cycle-dependent phosphorylation by various cyclin/CDK proteins.<sup>4</sup> BRCA1 Associated Protein 1 (BAP1), a 81 kD protein encoded by the *BAP1* gene that is proposed to be a tumor suppressor gene, functions in the BRCA1 growth control pathway, by enhancing the BRCA1-mediated inhibition of breast cancer cell growth.<sup>1</sup> BAP1 is a nuclear-localized, ubiquitin C-terminal hydrolase, that binds to the wild-type RING finger domain of BRCA1. It does not bind to germline mutants of the BRCA1-RING finger found in breast cancer kindreds. Murine *BAP1* and *BRCA1* are temporally and spatially co-expressed during murine breast development and remodeling, and show overlapping patterns of subnuclear distribution. BAP1 resides on human chromosome 3p21.3, and rearrangements, deletions and missense mutations of BAP1 have been found in lung carcinoma cell lines and in primary breast tumor samples. Antibodies reacting specifically with BAP1 are useful tools in the study of the detailed mechanisms of BRCA1 growth control pathways, and its essential roles during developmental and pathological processes.

#### Reagents

The product is supplied as ascites fluid with 15 mM sodium azide as a preservative.

**Precautions and Disclaimer**

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

**Storage/Stability**

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

**Product Profile**

A minimum working dilution of 1:2,000 is determined by immunoblotting, using a whole cell extract of human melanoma cell line.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilution by titration test.

**References**

1. Miki, Y., et al., *Science*, **266**, 66 (1994).
2. Futreal, P., et al., *Science*, **266**, 120 (1994).
3. Jensen, D.E., et al., *Oncogene*, **16**, 1097 (1998).
4. Gudas, J.M., et al., *Cell Grow. & Differ.*, **7**, 717 (1996).
5. Wilson, C.A., et al., *Oncogene*, **14**, 1 (1997).
6. Scully, R., et al., *Cell*, **88**, 265 (1997).
7. Maul, G.G., *Cell Grow. & Differ.*, **9**, 743 (1998).