

## p40 (M), Monoclonal Antibody

### p40 (M) [BC28]

| Format       | Catalog No    | Pack size   | Dilution     |
|--------------|---------------|-------------|--------------|
| Concentrated | GB3006A,C GB- | 0.1, 1.0 mL | 1: 100       |
| Prediluted   | p001AA,H      | 6.0, 25 mL  | Ready to use |

### PRODUCT DESCRIPTION -

The mouse monoclonal antibody p40 [BC28] identifies an epitope exclusive to the p40 protein and may serve as an alternative in instances where p63 has typically been employed. p63 [4A4] identifies both the p63 and p40 proteins. Consequently, p63 exhibits specificity limitations owing to its reactivity in a subset of lung adenocarcinomas (ADC). Conversely, p40 is exclusively expressed in lung squamous cell carcinoma (SqCC), providing a possibility for enhanced specificity. The p40 antibody (M) [BC28] identifies an epitope exclusive to p40, perhaps leading to reduced reactivity in lung ADC and enhanced specificity. Research has endorsed the regular application of p40 as a substitute for p63. Unlike the rabbit polyclonal p40, p40 [BC28] does not exhibit staining in macrophages.

### INTENDED USE -

p40 (M) [BC28] is a mouse monoclonal antibody designed for laboratory application in the qualitative detection of p40 protein using immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence must be supplemented by morphological studies utilizing appropriate controls and assessed in conjunction with the patient's clinical history and other diagnostic tests by a skilled pathologist.

### SUMMARY AND EXPLANATION -

The mouse monoclonal antibody p40 [clone BC28] identifies an epitope exclusive to the p40 protein. P40 is exclusively expressed in lung squamous cell carcinoma (SCC), providing an opportunity for enhanced specificity, which leads to reduced reactivity in lung adenocarcinoma (ADC) and greater specificity. The mouse monoclonal anti-p40 [BC28] exhibited elevated sensitivity and specificity, staining 97% (65/67) of lung SCC patients and 0% (0/71) of lung ADC cases. P40 has been shown in conjunction with TTF-1 as a technique to enhance specificity for

squamous cell carcinoma (SCC) vs adenocarcinoma (ADC), while conserving limited tissue samples.

Alterations in p40 expression have been associated with many neoplastic tissues, including bladder, prostate, and head and neck malignancies.

p40 (M) [BC28] was identified as a sensitive marker in all of these tissues. Research has endorsed the regular application of p40 as a substitute for p63.

## PRINCIPLE OF PROCEDURE -

Antigen identification in tissues and cells is a multi-phase immunohistochemistry procedure. The first step attaches the primary antibody to its corresponding epitope. Following the tagging of the antigen with a primary antibody, a one-, two-, or three-step detection protocol may be utilized. The one-step approach will utilize an enzyme-conjugated polymer that attaches to the main antibody. A two-step protocol will involve the addition of a secondary antibody to bind to the original antibody. An enzyme-conjugated polymer is subsequently introduced to interact with the secondary antibody. The three-step detection protocol will incorporate a secondary antibody to bind to the primary antibody, succeeded by a linker antibody step to enhance binding efficacy. An enzyme-conjugated polymer is subsequently introduced to attach to the linker antibody. The detection of bound antibodies is demonstrated using a colorimetric response.

SOURCE - Monoclonal mouse

SPECIES REACTIVITY - Human; others not tested

CLONE - B2C8

IMMUNOGEN - a synthetic peptide corresponding to amino acids 5-17 of human p40

ISOTYPE - IgG1

PROTEIN CONCENTRATION - Request lot-specific immunoglobulin concentration.

EPITOPE/ANTIGEN - amino acids 5-17 of p40

CELLULAR LOCALISATION - Nuclear

POSITIVE TISSUE CONTROL - Lung squamous cell carcinoma

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 a 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 - Lung squamous cell carcinoma
- 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.