

## Product Information

### Anti-HOXB5

produced in rabbit, affinity isolated antibody

Catalog Number **H0416**

### Product Description

Anti-HOXB5 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 103-121 of human HOXB5 (GeneID: 3215) conjugated to KLH. The corresponding sequence is identical in mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-HOXB5 recognizes human HOXB5 (also known as HOX-2A, HU-1 and Hox2.1). The antibody may be used in several immunochemical techniques including immunoblotting (~40 kDa). Detection of the HOXB5 band by immunoblotting is specifically inhibited with the immunizing peptide.

Hox genes are evolutionarily conserved transcription factors, which act to control important development pathways involved in morphogenesis of the embryo. In vertebrates, there are 39 *HOX* genes that are organized in four clusters (*HOXA–HOXD*) located on different chromosomes (7p15, 17q21.2, 12q13, and 2q31). Each cluster contains 9–11 member genes encoding relatively small gene products. The proteins contain a highly conserved 60-amino acid region (the homeobox) with DNA-binding activity that contributes to their activity as transcription factors.<sup>1</sup> One of the major functions of *Hox* genes seems to be the formation of the body plan during embryonic development.<sup>2</sup> In addition to roles in normal development, altered homeobox gene function or expression is implicated in the development of cancers, such as leukemias or in neoplasms of the breast, prostate, kidney, colon, skin and brain.<sup>3,4</sup> Studies have shown that HOXB5 is necessary for normal mouse lung branching morphogenesis, and its abnormal regulation causes specific alterations in airway branching.<sup>5,6</sup>

### Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards 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, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

### Product Profile

**Immunoblotting:** a working antibody concentration of 0.5–1 µg/mL is recommended using lysates of HEK-293T cells over expressing human HOXB5.

**Note:** In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

### References

1. Lemons, D., et al., *Science*, **313**, 1918–1922 (2006).
2. Akam, M., *Philos Trans. R. Soc. Lond. B Biol. Sci.*, **349**, 313–319 (1995).
3. Stuart, E.T., et al., *Adv. Genet.*, **33**, 255–274 (1995).
4. Cillo, C., et al., *Exp. Cell Res.*, **248**, 1–9 (1999).
5. Volpe, M.V., et al., *Biochim Biophys Acta.*, **1475**, 337–345 (2000).
6. Volpe, M.V., et al., *Birth Defects Res. A Clin. Mol. Teratol.*, **67**, 550–556 (2003).

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