

## Product Information

### Anti-HOXA1

produced in rabbit, IgG fraction of antiserum

Product Number: **H1291**

### Product Description

Anti-HOXA1 is produced in rabbit using as immunogen a synthetic peptide corresponding to a fragment of human HOXA1 (GeneID: 3198) conjugated to KLH. The corresponding sequence differs by one and three amino acid in mouse and rat, respectively. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-HOXA1 specifically recognizes human HOXA1 (also known as Hox-1F, HXA1). The antibody may be used in several immunochemical techniques including immunoblotting (~43 kDa). Staining of the HOXA1 band in 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 into 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 containing 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 neoplasms of the breast, prostate, kidney, colon, skin and brain.<sup>3,4</sup> Disruption of the HOXA1 gene results in abnormal ossification of the skull, hindbrain, and inner ear deficiencies, and neonatal death.<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.

### Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

### Storage/Stability

Store at –20 °C. For continuous use, the product may be stored at 2–8 °C for up to one month. For extended storage, freeze in working aliquots at –20 °C. 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 dilution of 1:500-1:1,000 is recommended using lysate of HEK-293T cells overexpressing human HOXA1.

**Note:** In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

### References

1. Lemons, D., and McGinnis, W., *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. Lufkin, T. et al., *Cell*, **66**, 1105-1119 (1991).
6. Chisaka, O. et al., *Nature*, **355**, 516-520 (1992).

VS,SG,KAA,TD,PHC,MAM 03/19-1