Monoclonal Antibodies for Melanocytic Tumor Identification (HMB-18, HMB-45, HMB-50)

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Category
Research Tools/Biological Materials/Antibody

Authors
Allen Gown

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Biomaterial – Antibody

Biomaterial Description

These monoclonal antibodies were developed against an extract of human melanoma and selectively recognize an intracytoplasmic antigen present in melanocytic tumors. Among them, HMB-45 demonstrates the strongest and most consistent immunoreactivity. These antibodies distinguish subpopulations of melanocytes and are highly specific for junctional nevus cells, fetal and neonatal melanocytes, and malignant melanomas, while remaining non-reactive with normal adult melanocytes and nonmelanocytic tumors.

Validated for use in fixed, paraffin-embedded tissue, these antibodies offer a powerful tool for surgical pathology and melanoma research.

Applications

-Differential diagnosis of undifferentiated malignant tumors

-Identification of metastatic melanoma in lymph nodes

-Mapping melanocytic subpopulations in skin lesions

-Studies of melanocyte development and proliferation

-Immunocytochemical profiling of tumor biopsies

-in vitro labeling of melanoma cell lines for antigen localization

Advantages

-Absolute specificity for melanocytic tumors (97% sensitivity, 100% positive predictive value)

-No cross-reactivity with carcinomas, lymphomas, sarcomas, or glial tumors

-Compatible with formalin- and methacarn-fixed, paraffin-embedded tissue

-Enables identification of proliferative melanocyte subsets

-Useful in distinguishing junctional from intradermal nevus cells

-Strong cytoplasmic labeling with minimal background staining

-Applicable to immunoperoxidase and immunofluorescence techniques

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References

1. Gown, A. M., Vogel, A. M., Hoak, D., Gough, F., McNutt, M. A. (1986) , https://pmc.ncbi.nlm.nih.gov/articles/PMC1888307/, https://ajp.amjpathol.org/, 123, 195-203