

# Melanoma Markers: MART-1 / Melan A vs HMB45

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Melanomas are a heterogeneous group of tumors (neoplasms) that develop in the melanocytes, the pigment-producing cells in the skin. Accurate diagnosis of these disease states is essential for proper management and prognosis, and immunohistochemistry (IHC) has been a longstanding tool for this purpose. MART-1/Melan A and HMB45 are two commonly used IHC markers for melanoma, though they may differ in their sensitivity.

MART-1/Melan A is a protein expressed in the cytoplasm of melanocytes, making it a sensitive marker for melanocytic differentiation.<sup>4</sup> These markers are expressed in both adult melanocytes and melanomas.<sup>4</sup>

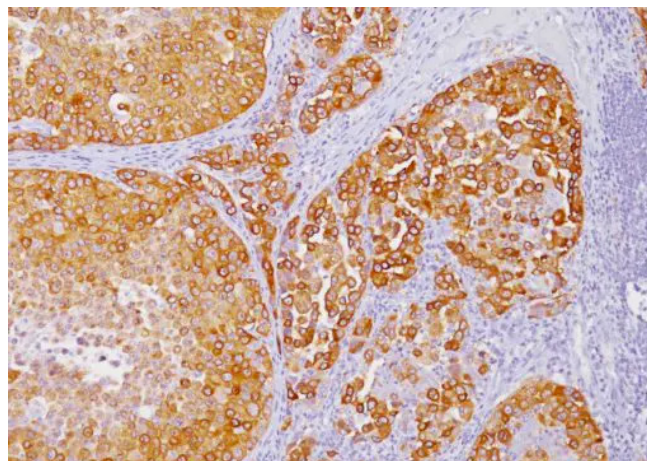
HMB45 is another commonly used marker for melanocytic neoplasms. HMB45 recognizes a glycoprotein in the organelles where melanin synthesis occurs.<sup>2</sup> Compared to MART-1/Melan A, studies have found that HMB45 may not be expressed in as many types of melanocytic neoplasms.<sup>3,5</sup> Additionally, HMB45 may also be expressed in other non-melanocytic tumors, such as clear cell sarcoma.<sup>1</sup>

However, while MART-1/Melan A is expressed in a wider range of melanocytic neoplasms, studies have shown that it may have more limited expression in non-melanocytic tumors.<sup>1</sup>

In some cases, it may be advantageous to cocktail these two antibodies together to take advantage of both of their strengths. Pan-melanoma cocktails may consist of a cocktail of HMB45, MART-1/Melan A, and Tyrosinase, a key enzyme in melanin synthesis that may be found in a higher number of metastatic melanomas than MART-1/Melan A.<sup>3,5</sup>

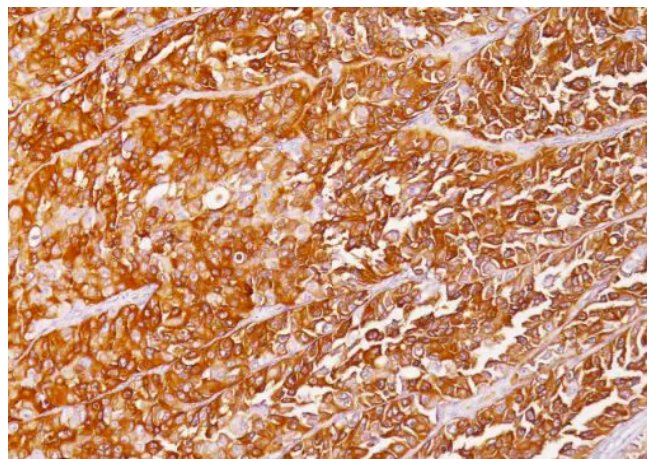
To learn more about Biocare's offerings for MART-1/Melan A, HMB45, as well as Pan-Melanoma Cocktails, please visit our website at [biocare.net](http://biocare.net) or call our technical support line at 1-800-799-9499, Option 3.

### MART-1 / Melan A Cocktail



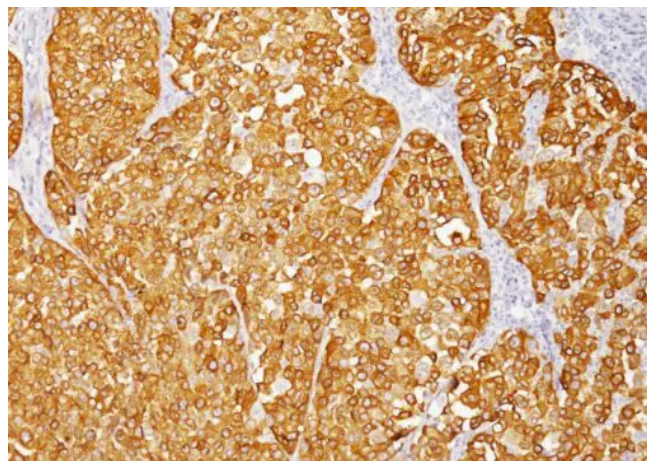
Melanoma stained with MART-1 antibody cocktail

### HMB45 Antibody



Melanoma stained with HMB45 antibody

### HMB45 + MART-1 + Tyrosinase



Melanoma stained with HMB45 + MART-1 + Tyrosinase antibody cocktail

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2. Hoang, M. (2017). Melanocytic neoplasms. In M. Hoang (Ed.), *Immunohistochemistry in Diagnostic Dermatopathology* (pp. 115-137). Cambridge: Cambridge University Press. doi:10.1017/9781316576816.007
3. Orchard G. Evaluation of melanocytic neoplasms: application of a pan-melanoma antibody cocktail. *Br J Biomed Sci.* 2002;59(4):196-202. doi: 10.1080/09674845.2002.11783659. PMID: 12572952.
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5. Zubovits J, Buzney E, Yu L, Duncan LM. HMB-45, S-100, NK1/C3, and MART-1 in metastatic melanoma. *Hum Pathol.* 2004 Feb;35(2):217-23. doi: 10.1016/j.humpath.2003.09.019. PMID: 14991540.