



WAVESENSE

MELANOMA ASSAY REFERENCES AND LITERATURE

Detection Antibodies Used in the EpiSep Melanoma Assay:

M2-7C10 recognizing the MART-1 epitope (18 kDa) in melanoma cells was originally produced and characterized by Kawakami et al, 1997:

[Kawakami Y, Battles JK, Kobayashi T, Ennis W, Wang X, Tupesis JP, Marincola FM, Robbins PF, Hearing VJ, Gonda MA, Rosenberg SA.](#)

[Related Articles, Links](#)

A103 detecting the Melan-A epitope (20-22 kDa doublet) in melanoma cells was originally produced and characterized by Chen et al, 1996:

[Chen YT, Stockert E, Jungbluth A, Tsang S, Coplan KA, Scanlan MJ, Old LJ.](#)

[Related Articles, Links](#)

There are detailed examinations of each clone's reactivity to various melanoma cell lines in these studies.

Since the development of these clones, both have been utilized extensively and their reactivity has been well established. Below are links to some additional studies citing the use of these clones. Several of the papers use both M2-7C10 and A103 as well as T311, since they are commonly used in a panel together.

As pair to the Melan-A/MART-1 epitopes in melanoma cells, they were defined as a new melanocytic differentiation marker.

[Busam KJ, Jungbluth AA.](#) [Related Articles, Links](#)

[Levy F, Muehlethaler K, Salvi S, Peitrequin AL, Lindholm CK, Cerottini JC, Rimoldi D.](#)

[Busam KJ, Iversen K, Coplan KA, Old LJ, Stockert E, Chen YT, McGregor D, Jungbluth A.](#)

[Hoashi T, Watabe H, Muller J, Yamaguchi Y, Vieira WD, Hearing VJ.](#)

The use of a panel mixture (cocktail) of all three antibodies M2-7C10, A103 and T311 has studied.

[Shidham VB, Qi D, Rao RN, Acker SM, Chang CC, Kampalath B, Dawson G, Machhi JK, Komorowski RA.](#) [Related Articles, Links](#)

T311 to the enzyme tyrosinase has been extensively studied in diagnostic

immunohistochemistry and immunoresearch. T311 recognizes a cluster of protein moieties ranging from 70-80 kDa in Tyrosinase mRNA-positive melanoma cell lines and melanoma specimens as well as in L cells transfected with Tyrosinase cDNA. Tyrosinase expression is correlated with the presence of Tyrosinase mRNA.

[Chen YT, Stockert E, Tsang S, Coplan KA, Old LJ.](#)

The presence of Tyrosinase mRNA in the blood has been suggested to correlate with the stage of melanoma, and a reverse transcription-PCR assay has been used in the past in the detection of Tyrosinase mRNA in peripheral blood.

[Stevens GL, Scheer WD, Levine EA.](#)

In regards to diagnostic IHC, T311 is most often used with a panel of other antibodies including markers for gp100 (ex. HMB45), MART-1 (ex. A103), MiTF (ex. D5), and S100. 84% of metastatic malignant melanomas have been shown to be immunoreactive with T311 showing a predominantly homogeneous expression pattern. However, primary melanomas of desmoplastic/spindle cell type showed poor reactivity.

[Jungbluth AA, Iversen K, Coplan K, Kolb D, Stockert E, Chen YT, Old LJ, Busam K.](#)

A tendency for weak or absent staining of the mature melanocytes in intradermal and compound naevi has been noted, although T311 is 94% sensitive for melanomas overall.

[Clarkson KS, Sturdgess IC, Molyneux AJ.](#)

Another study finds that 92% of metastatic melanomas are positive for T311.

[Busam KJ, Kucukgol D, Sato E, Frosina D, Teruya-Feldstein J, Jungbluth AA.](#)

T311 is reported to be the most sensitive marker for sinonasal melanomas.

[Prasad ML, Jungbluth AA, Iversen K, Huvos AG, Busam KJ.](#)

T311 shows poor reactivity in Angiomyolipomas and is of no use in its diagnosis, although Tyrosinase mRNA was found in all cases.

[Jungbluth AA, King R, Fisher DE, Iversen K, Coplan K, Kolb D, Williamson B, Chen YT, Stockert E, Old LJ, Busam KJ.](#)

Below is an additional link to a recent immunohistochemical study that looks at Tyrosinase expression in malignant melanoma, desmoplastic melanoma, and peripheral nerve tumors.

[Boyle JL, Haupt HM, Stern JB, Multhaupt HA.](#)

Capture Antibody Used in the EpiSep Melanoma Assay:

Monoclonal Antibody 9.2.27 to Melanoma-associated Chondroitin Sulfate Proteoglycan (MCSP) was developed to a 4M urea extract derived from human melanoma cells (M14). The 9.2.27 antibody recognized a 240k dalton glycoprotein found on all melanoma cell lines tested but not on carcinoma, lymphoid, or fibroblastoid cultures.

[Morgan AC Jr, Galloway DR, Reisfeld RA.](#) [Related Articles, Links](#)

MCSP, recognized by monoclonal antibody 9.2.27, has been cloned and demonstrated to represent an integral membrane chondroitin sulfate proteoglycan expressed by human malignant cells. MCSP has been shown to be expressed on >90% of human

melanoma tissues and cultured cells.

[Pluschke G, Vanek M, Evans A, Dittmar T, Schmid P, Itin P, Filardo EJ, Reisfeld RA.](#) [Related Articles, Links](#)

Monoclonal Antibody 9.2.27 has been used in xenografted radiolocalization studies. Related links have demonstrated the use of the antibody with in vivo localization.

[Hwang KM, Fodstad O, Oldham RK, Morgan AC Jr.](#) [Related Articles, Links](#)