



MUC4 Staining in Sarcomatoid Carcinomas

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To the editor: We read with great interest the recent article ‘MUC4, a novel immunohistochemical marker identified by gene expression profiling, differentiates pleural sarcomatoid mesothelioma from lung sarcomatoid carcinoma’ [1]. Amatya et al found that MUC4 was highly expressed in sarcomatoid lung carcinomas (21/29) and not expressed in sarcomatoid mesotheliomas (0/31), with negative MUC4 expression having a 100% sensitivity and 72% specificity in diagnosing sarcomatoid mesothelioma.

We have attempted to replicate these findings in our own laboratory using the same antibody and staining conditions as reported by Amatya et al. We stained 13 sarcomatoid carcinomas of the lung and 6 sarcomatoid mesotheliomas (Table 1); all of the tumors were confirmed by immunohistochemical staining and imaging/thoroscopic findings. Of the 13 sarcomatoid carcinomas, 9 showed no staining of the sarcomatoid component at all (Fig. 1), and 3 showed scattered, <1%, positivity in the sarcomatoid component. Only one case showed strong and diffuse positivity in the sarcomatoid component. Most interestingly, three of the sarcomatoid carcinomas also had an epithelial component and the epithelial component stained in all three. All six sarcomatoid mesotheliomas showed no staining. Bronchiolar epithelium that had been overrun by tumor stained strongly and served as a positive internal control (Fig. 1)

In conclusion, although MUC4 may stain sarcomatoid carcinomas of the lung, we found that the frequency/diffuseness of positive staining is too low to make this test useful for separating sarcomatoid carcinomas from sarcomatoid mesotheliomas.

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Table 1 Staining results in sarcomatoid carcinomas and sarcomatoid mesotheliomas

Tumor/element	Result
Sarcomatoid carcinoma-sarcomatoid component, diffuse staining	1/13
Sarcomatoid carcinoma-focal staining sarcomatoid component (less than 1% of cells)	3/13
Sarcomatoid carcinoma-staining of epithelial component	3/13
Sarcomatoid mesothelioma	0/6

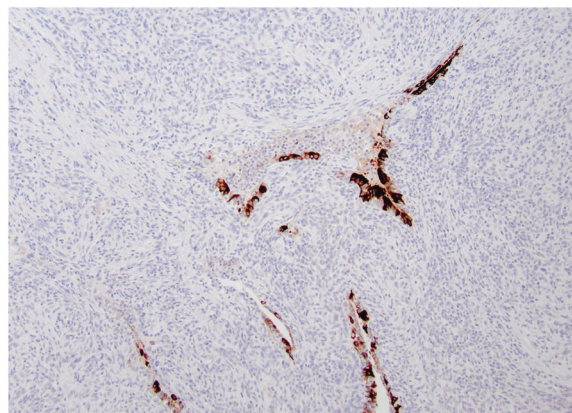


Fig. 1 Sarcomatoid carcinoma of the lung showing intense staining of overrun bronchiolar epithelium (which serves as a positive internal control) but no staining of the sarcomatoid tumor

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

1. Amatya VJ, Kushitani K, Mawas AS, Miyata Y, Okada M, Kishimoto T, Inai K, Takeshima Y. MUC4, a novel immunohistochemical marker identified by gene expression profiling, differentiates pleural sarcomatoid mesothelioma from lung sarcomatoid carcinoma. *Mod Pathol.* 2017;30:672–81.