

## S-100 Protein Marker

### TO THE EDITOR:

I am concerned about the use of the commercial Dakopatts rabbit antiserum to the bovine S-100 protein. I understand that Dako antisera are routinely raised using Complete Freund's Adjuvant, so that crude antisera contain not only antibodies to the primary antigen of interest, in this case S-100 protein, but also to mycobacterial components. Unless the authors are certain that complete adjuvant was not used, or that the antiserum was affinity purified with S-100 protein, one should assume that both S-100 protein and mycobacterial antigen specificities are present. Consequently, any positive immunohistochemical staining may be attributable to the presence of either S-100 protein or some mycobacterial component, such as arabinogalactan or lipoarabinomannan, that is common to all mycobacterial species.

Such considerations do not invalidate the visualization of fragmented peripheral nerves, regardless of the antigen that is being

stained. However, the staining of Langerhans', dendritic, and other cells may be misleading, because it indicates that the cells express the S-100 protein. Does positive staining truly represent the presence of the S-100 protein, or residual mycobacterial material, or even some unknown antigen?

The specificity of the primary antiserum could be checked in several ways: a) use of tissues from patients with nonmycobacterial diseases; b) absorption of the primary antiserum with mycobacteria; c) competition of the primary antiserum with purified S-100 protein; d) use of a Dakopatts antiserum directed against an irrelevant antigen.

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