Unexpected Immunohistochemical Localization of Deoxycytidine Kinase

To the Editor: We read with great interest the April 15, 2006 article by Sebastiani et al. reporting immunohistochemical evaluation of deoxycytidine kinase (dCK) in 44 pancreatic cancer patients, which found that most cases (40 of 44) were positive for dCK (1). Based on the observed staining, the investigators have shown low dCK expression to be significantly associated with higher age ($P < 0.0006$), female sex ($P < 0.04$), and most importantly, decreased overall survival of patients ($P < 0.0009$) and suggest that pretreatment dCK might be a predictive factor for benefit from gemcitabine. We were surprised, however, to read that positive dCK staining was predominantly nuclear, as the reported literature supports a cytoplasmic cellular localization on the basis of immunocytochemistry, immunoblotting of cellular fractions, enzymatic activity studies, and kinetic isotope incorporation experiments (2–9).

This finding is particularly surprising because Sebastiani et al. used the same rabbit polyclonal antibody reported previously to show cytoplasmic localization of dCK in cell lines, thymocytes, and splenocytes (4) and in various cultured hematologic cells (2). In these studies, nuclear staining has been reported only in cells with very high levels of dCK protein (2, 4). Given the unexpected cellular localization and the possibility for antibody cross-reactivity with non-dCK epitopes in antigen-retrieved formalin-fixed sections, we wonder whether additional controls might further clarify this important study.

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References
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