An isoenzyme of transketolase, transketolase-like (TKTL)-1, has been hypothesized to play a pivotal role in the pathophysiology of malignant tumors. Available data are based on the detection of the putative TKTL-1 protein with one particular mouse monoclonal anti-TKTL-1 antibody, clone JFC12T10. In this study it was demonstrated that a) JFC12T10 detects multiple unspecific bands in Western blots, b) a 75-kDa band hitherto referred to as TKTL-1 corresponds to a nuclear protein and c) immunohistochemical detection of TKTL-1 in benign leiomyomas yields an expression pattern identical to that found in a variety of malignant tumors. In RT-PCR assays, using three different primer pairs for transketolase, TKTL-1 and yet another isogene of transketolase, TKTL-2, a relevant expression of TKTL-1 was not detectable in any of the 6 malignant tumor cell lines investigated (MCF-7, A549, HeLa, HT1080, M21 and TF-1). Expression levels of TKTL-1 were rather similar to those found for TKTL-2, although the latter has never been implicated in malignant disease. On the basis of these data, nutritional recommendations based on a hypothetically TKTL-1 controlled metabolism of tumor cells must be regarded as lacking scientific evidence.
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