Correspondence

IMP3: a potential diagnostic and therapeutic biomarker for cancers

To the Editor,

Immunohistochemical expression levels of insulin-like growth factor II mRNA-binding protein 3 (IMP3) have been reported to be implicated in the migration, invasion, and metastasis of various cancers. However, IMP3 expression signatures and function profiles in human colorectal cancer (CRC) are still largely elusive. Surprisingly, we read with great interest the recently published work by Wei et al [1] demonstrating that IMP3 is significantly highly regulated in patients with CRC resection specimens. They subsequently regarded IMP3 as a reliable marker for the diagnosis of CRC. These results suggest that IMP3 may serve as a diagnostic and prognostic biomarker for various cancers.

A differential diagnosis between papillary neoplasm of the bile duct and papillary cholangiocarcinoma currently remains difficult. IMP3 showed the greatest specificity to predict presence of invasion [2], which may be a useful marker for predicting invasion in intraductal papillary growth. Intriguingly, Ohashi and colleagues [3] similarly found that IMP3 expression was associated with adverse clinicopathological parameters and shorter overall survival in metaplastic breast carcinoma patients. Most importantly, multilevel gene expression regulation imposed by IMP3 in glioma cells has been suggested to be associated with processes related to cell cycle– and apoptosis-related pathways [4]. A further study has demonstrated that p65 (RELA), a subunit of the NF-κB heterodimer, is a target and an important mediator of IMP3, which underscores the significance of an IMP3-p65 feedback loop for increasing glioma cell migration [5]. In addition, high IMP3 expression levels were determined to be associated with a high disease stage in patients with gastroenteropancreatic neuroendocrine neoplasm; thus, it may serve as a predictor for metastasis and poor clinical outcomes in gastroenteropancreatic neuroendocrine neoplasm [6]. A review of the medical records and pathological slides of patients revealed that IMP3 at the nodal site resulted to be associated with low progression-free survival in small intestine neuroendocrine neoplasms [7]. IMP3 is expressed preferentially in triple-negative breast cancer, which promotes stem-like properties and chemoresistance [8,9]. Mechanically, IMP3 could promote invasion and migration through the epithelial-to-mesenchymal transition in breast cancer cells [10].

Taken together, emerging evidence from experimental models and clinical patients indicates that high IMP3 expression is associated with poor prognosis in most solid tumors. IMP3 is a potentially valuable prognostic factor and might serve as a promising biomarker to guide clinical decisions in disparate human tumors.

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References
