

## The oncoprotein HBXIP – its functions and roles in oncogenesis

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### ABSTRACT

Nowadays, Hepatitis B X interacting protein (HBXIP) is an object of scientists' interest worldwide. It is a protein with significant involvement in the development of malignant tumors like breast or ovarian cancer. One of the most important functions of HBXIP is the regulation of cell proliferation, which is related to the progression of a cell cycle. Many studies provide the growing number of evidence that HBXIP plays various important roles, including the regulation of a cell cycle through complexes with survivin, belonging to the inhibitors of apoptosis and interactions with transcriptional factors like STAT4, SP1, TFIID or E2F1. It also has the influence on the promotion of tumor angiogenesis thanks to the association with VEGF and FGF8. Another important role of HBXIP is a reprogramming of glucose metabolism to conditions favorable to growing cancerous cells due

to regulating the activation of SCO2 and PDHA1. Furthermore, it impacts on the complement-dependent cytotoxicity, also, HBXIP affects on lipid metabolism through disturbing of metabolic pathways of FAS. According to recent studies, HBXIP can be used as a prognostic biomarker in many tumors, including cervical cancer, ovarian cancer, and esophageal squamous cell carcinoma thanks to the high expression of this protein noted exclusively in these tumor tissues. What is even more interesting, it significantly correlates with clinical attributes like metastasis to lymph nodes or grading and in some cases can potentially be used as the indicator of prognosis of treatment effectiveness. The paper is review through main functions of HBXIP and its possible applications.

**Keywords:** HBXIP, survivin, oncoprotein, transcription factor

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