TRANSIENT DOWNREGULATION OF INDOLEAMINE 2,3-DIOXYGENASE (IDO) IS CRITICAL FOR BLADDER CANCER CELL INVASION

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The most common form of human bladder cancer is non-muscle invasive, however, half of these cases progress to a muscle-invasive, which ultimately leads to metastasis and cancer-specific death. Indoleamine 2,3-dioxygenase (IDO) is an enzyme induced strongly by INF-gamma that has been recognized as an immunomodulatory molecule since it was described in the placenta protecting embryos from maternal immune attack. A growing body of evidence suggests that IDO is expressed in tumors, enabling cancers to evade immune surveillance. Moreover, IDO has presented immunosuppressive effects in some tumors. Recently, we demonstrated that IDO expression is suppressed by TGF-beta in bladder cancer cells, an important inducer of cancer invasiveness. Here, we raised the hypothesis that IDO is involved in the bladder cancer cell invasion process. IDO activity, transcript, tryptophan breakdown, and oxidative enzymes in the microenvironment. However, the IDO transient downregulation permitted the growth and invasion of these cells. Our findings suggest that downregulation of IDO expression can provide a therapeutic target in bladder cancer.

Support or Funding Information
FUNDAÇÃO DE AMPARO A PESQUISA DO ESTADO DE SÃO PAULO PROJETO 2016/04105-0 CAPES