

AB026. Loss of KCNJ15 expression promotes malignant phenotypes and correlates with poor prognosis in renal carcinoma

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Abstract: Potassium inwardly rectifying channel, subfamily J, member 15 (KCNJ15) belongs to the inwardly rectifying potassium channel (KIR) family. Although members of the KIR family have been proven to play important roles in a variety of developmental processes, the expression, biological functions and molecular mechanisms of KCNJ15 in cancers remain unclear. Here, we first found that KCNJ15 was significantly downregulated in renal

cell carcinoma (RCC), and this low expression was an independent prognostic factor for clear cell RCC. Moreover, KCNJ15 was associated with advanced TNM stage (n=150, P=0.014) and histologic grade (n=150, P=0.045). Furthermore, KCNJ15 overexpression significantly inhibited RCC cell proliferation, migration, and colony formation, arrested the cell cycle and induced apoptosis of RCC cells *in vitro*. The inhibitory effect of KCNJ15 overexpression may be regulated by its effects on the epithelial mesenchymal transition process and matrix metalloproteinase (MMP)-7 and p21 expression. These findings indicate that KCNJ15 may be a tumour suppressor in RCC and a possible target for RCC therapy.

Keywords: KCNJ15; renal cell carcinoma (RCC); proliferation; migration; prognosis

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