2-O-22

Oral Sessions

Overexpression of KCNK9 exerts anti- and pro-apoptotic effect on PANC1 cellsKuniaki Ishii¹, Yoshihiro Konno¹, Makoto Satoh¹, Yutaro Obara¹¹Dept. Pharmacol. Sch. Med., Yamagata Univ.

KCNK9, a member of the two-pore K⁺ channel family, is overexpressed in several types of human carcinomas, such as breast cancers and lung cancers, and is generally thought to be an oncogenic channel. However, it has been also reported that overexpression of KCNK9 induces apoptosis in some kinds of cells including cerebellar granular neurons. Thus, a paradox is observed in the effects of KCNK9 overexpression on apoptosis, which is considered to be due to differences in KCNK9 expression levels: low expression is anti-apoptotic and high expression is pro-apoptotic. In this study, we investigated whether it is true in the human pancreatic cancer cell lines, PANC1. For that purpose, KCNK9 was expressed transiently and stably in the cells. Transient overexpression of KCNK9 increased caspase activities in the transfected cells, whereas stable expression of KCNK9 made the cells resistant to hyperosmolarity-induced apoptosis. Although the mechanism is not fully understood, our data suggest that the opposite effect of KCNK9 overexpression on PANC1 apoptosis is not solely due to differential expression levels of the channels.