Expression and activity of potassium ion channels in human prostate cancer.


Source
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Abstract
Four normal and 79 human prostate cancer (Pca) specimens were examined, by immunohistochemistry, for expression of voltage-gated potassium ion channels. Strong immunostaining (for Kv1.3) was observed in the normal and 47% (37/79) of Pca specimens. Twenty-nine percent (23/79) Pca specimens showed moderate and 24% (19/79) displayed low staining. Three potassium channel-openers at a concentration of 10 microg/mL, minoxidil (47.8 microM), 1-Ethyl-2-benzimidazolinone (EBIO) (61.7 microM) and diazoxide (43.3 microM), increased growth of PC3 cells by 30-50%.
Potassium channel-blockers, dequalinium, amiodarone and glibenclamide, caused a dose-dependent, growth inhibition of four human Pca cell lines. Apoptosis occurred within 4h of treatment of PC3 cells with dequalinium (0.5 microg/mL, 0.9 microM), amiodarone (5 microg/mL, 7.3 microM) or glibenclamide (50 microg/mL, 0.1mM).

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