TRPM4 channel is involved in regulating epithelial to mesenchymal transition, migration, and invasion of prostate cancer cell lines

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© 2018 Wiley Periodicals, Inc. Transient Receptor Potential Melastatin 4 (TRPM4) is a Ca 2+ -activated and voltage-dependent monovalent cation channel, which depolarizes the plasma cell membrane, thereby modulating Ca 2+ influx across Ca 2+ -permeable pathways. TRPM4 is involved in different physiological processes such as T cell activation and the migration of endothelial and certain immune cells. Overexpression of this channel has been reported in various types of tumors including prostate cancer. In this study, a significant overexpression of TRPM4 was found only in samples from cancer with a Gleason score higher than 7, which are more likely to spread. To evaluate whether TRPM4 overexpression was related to the spreading capability of tumors, TRPM4 was knockdown by using shRNAs in PC3 prostate cancer cells and the effect on cellular migration and invasion was analyzed. PC3 cells with reduced levels of TRPM4 (shTRPM4) display a decrease of the migration/invasion capability. A reduct