

Effects of androgens on telomerase activity in normal and malignant prostate cells in vitro.

[Soda H](#), [Raymond E](#), [Sharma S](#), [Lawrence R](#), [Davidson K](#), [Oka M](#), [Kohno S](#), [Izbicka E](#), [Von Hoff DD](#).

Source

Institute for Drug Development, Cancer Therapy and Research Center, San Antonio, TX, USA.
okamikio@net.nagasaki-u.ac.jp

Abstract

BACKGROUND:

Recent studies have shown that sex hormones regulate telomerase activity in endometrium and breast tissues. The present study was designed to clarify the effects of androgen on telomerase activity in normal and malignant prostate cells.

METHODS:

Androgen-sensitive (LNCaP) and -independent (TSU-Pr1 and DU145) prostate cancer cell lines and normal prostate cells including basal cells were cultured in the presence or absence of 5 α -dihydrotestosterone (DHT).

RESULTS:

Prostate cancer cell lines exhibited high telomerase activity, and normal prostate cells showed low activity. Short or prolonged androgen-deprivation reduced telomerase activity in LNCaP cells, and DHT induced telomerase activity at the G(1) phase of the cell cycle. DHT did not modulate telomerase activity in TSU-Pr1, DU145, and normal cells.

CONCLUSIONS:

LNCaP cells had an androgen-dependent pathway to activate telomerase, whereas TSU-Pr1 and DU145 cells as well as normal prostate cells had an androgen-independent pathway. These findings suggest that the regulatory mechanism of telomerase varies during the progression of prostate cancers.

Copyright 2000 Wiley-Liss, Inc.