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Estrogen receptors in TRAMP C2 cells

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According to a 2005 study done by the American Cancer Society, prostate cancer is the second most common type of cancer among American men. It has been shown that estrogen receptors alpha and beta play significant roles in the development and inhibition of prostate cancer. To further understand the roles ERs play in prostate cancer, a Transgenic Adenocarcinogenic of the Mouse Prostate (TRAMP) model was utilized. Simply put, these DNA engineered mice are highly likely to develop a prostate cancer similar to the type experienced by humans. Similar to humans, in TRAMP mice there are different stages of prostate cancer; well differentiated carcinoma (WDC) and poorly differentiated carcinoma (PDC) are the stages being we study extensively. It has been shown that double transgenic ER alpha knockout/ TRAMP mice have decreased incidence of PDC, while ER beta knockout/ TRAMP mice have increased incidence of PDC, which implies different roles for ER α and ER β in prostate cancer. The TRAMP C2 cell line is derived from TRAMP mice and potentially serve as a good model for in vitro studies of prostate cancer. This cell line would be useful for studying estrogen effects on prostate cancer, if it contained ER α and β . Our hypothesis is that TRAMP C2 cells are ER α and ER β positive. The goal of this research is to test for the presence of these proteins in the TRAMP C2 cell line. To test for the presence of ER alpha and ER beta, the Western blot method was used. Western Blot is a widely accepted and efficient method for detecting a specific protein among a mixture of many different ones. In conclusion, both estrogen receptor α and β are present in TRAMP C2 cells. With this confirmation, the cure to prostate cancer is one step closer because this TRAMP C2 cell line will be well suited for determining the benefits of ER alpha and ER beta manipulation.