Mutant Mice Studied for Early Stage Prostate Carcinogenesis

Technology #2737

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Prostate Cancer Studies with Nkx3.1; Pten Compound Mutant Mice that Displayed Early Carcinoma Lesions
Prostate cancer is the most common cancer in men after skin cancer. Thus there is a need to understand prostate carcinogenesis and develop treatments for prostate cancer. Nkx3.1 is involved in prostate cancer initiation. This technology provides Nkx3.1; Pten compound mutant mice that display an increased incidence of high-grade PIN (HGPIN)/early carcinoma lesions, which resemble early stages of human prostate carcinogenesis.

Mutant Mice Aid in Study of Early Stages of Human Prostate Carcinogenesis The Nkx3.1 homeobox gene has restricted expression in the prostate and essential role in prostate differentiation and function. PTEN represents a frequent target of mutational inactivation in human cancers, and Pten heterozygous mutant mice develop cancers or dysplasias of multiple tissues, including the prostate. Loss of function of Nkx3.1 and Pten cooperate in prostate cancer progression. These mice are compound mutants in both Nkx3.1 and Pten, leading to synergistic activation of Akt in the prostate, suggesting that Akt deregulation is a critical event in prostate carcinogenesis.

Applications: • The study of prostate carcinogenesis • Characterization of the early stages of carcinogenesis • Development of potential treatments for prostate cancer

Advantages: • These mice provide a model system for the study of the early stages of human prostate carcinogenesis

Patent Status: Copyright

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