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# Produce a Novel Breast Cancer Disease Model with Tet-off System

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The utility of transgenic animal for studying the function of a particular gene in the breast system has been limited because transgenic typically occurs constitutively throughout development and in most tissue. So we use the inducible gene expre-ssion system. Several inducible gene expression system have been developed in vitro in recent years to overcome limitation with transgenic mice. The tetracycline conditional system developed by H.Bujard and colleagues (Gossen &Bujard,1992) allows reversible change in gene expression over several orders of magnitude and can be made tissue-specific by targeting the expression of tTA using a tissue-specific promoter. We used this system, induces transcription from a minimal promoter(Pcmv) fused to several tet operator sequences in the absence of tetracycline but not in its presence. Hccr-2 gene is new human cervical cancer proto-oncogene. We had generated the over expression HccR-2 transgenic mice one year ago(not Tet-off system). Almost female mice (twice parous) occurs breast cancer at the second delivery (almost 95%-lung, liver, and breast cancer). Male mouse occurredliver carcinoma and lung carcinoma. So we use this inducible system for regulate the breast cancer diseases model animal.

We established the two line(tTA & pTRE2+HccR-2) transgenic mice and generation double transgenic mice(BCF1). Doxycycline hydrochloride were fed to the mice in drinking water at 0.2mg/ml made up refreshly. The HccR-2 with Tet-off transgenic mice may there be a useful model for the study of breast cell oncogenesis.

key words) ***transgenic mice, Hccr-2, Pcmv, Tet-off system, tTA***