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Transgene Expression of Biologically Active Human Follicle-Stimulating Hormone in Milk and Histological Analysis

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Follicle stimulating hormone (FSH) is a pituitary glycoprotein composed of two post translationally modified subunits, which must properly assemble to be biologically active. We developed a transgenic (TG) mouse model that overexpresses the human Follicle-Stimulating hormone (FSH) -subunit under the bovine -casein promoter, displaying in females an excessive levels express in mammary gland. Human FSH translation was detected only on mammary gland as determined by RT-PCR and Immunohistochemistry. Furthermore, Human FSH was produced at levels of up to 300mIU/ml in transgenic mice milk. Its biological activity was equivalent to recombinant human FSH when assayed using *in vitro* cell proliferation. Human FSH from transgenic mice milk increase the total number of the hFSH transfected 293 cells. Mammary glands were showed the normal phenotype. These results demonstrate that mammary gland can used as a bioreactor to biologically important substances.

Key words: ***Transgenic mice, hFSH, Mammary gland***