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### Morphologic Changes in Urinary Bladder of Male and Female Mouse by Estrogen Receptor Agonist

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In relation to estrogen's function, the present study was designed to identify effects of estrogen receptor agonist, PPT in the urinary bladder of the male and female mouse. Controls received weekly injections of the castor oil vehicle. PPT was subcutaneously given to adult male mice at a weekly dosage of 178.6mg/kg in a volume 0.08ml(male) or 0.06ml(female) of vehicle for 3, 5, or 8 weeks. Body weight were decreased in treated group whereas, urinary bladder weight was increased. The luminal diameter of bladder was increased with PPT-treatment group in male and female. In the bladder, transitional epithelium showed irregular morphology by PPT-treatment. In microscopic observations, height of epithelial cells in the bladder was reduced at all time points. These results suggest that microstructure of bladder was changed by treatment of estrogen receptor agonist PPT in the mice resulting in functional alterations of the organs.

**Key words:** Urinary bladder, estrogen receptor agonist, mouse

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### *In Vitro* Adventitious Shoot and Root Regeneration from Callus of Mung Bean Stem

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This study was carried out to investigate the adventitious shoot and root development from callus of young stem explants of mung bean (*Vigna radiata*). The influence of plant growth regulators on adventitious shoot and root development was studied. For the callus induction from stem explants, combination of 0.5 mg/L 2,4-D and 1.0 mg/L kinetin was very effective . For the adventitious shoot and root regeneration from the callus tissues, the plant growth regulators combination of 0.75 mg/L NAA, 1.5 mg/L kinetin and MS salts resulted in about 21% efficiency. Histological examination showed that adventitious shoots were developed from shoot apical meristem originated from the surface of callus masses. The shoot apical meristem produced leaf primordium, which then became leaf. Adventitious roots developed from root primordia originated from the center of callus masses. The root primodia produced tracheid-like cells and then these tracheid-like cells became meristemoid cells for the cambium cells. These meristemoid cells existed in callus tissues in a scattered manner and became root primordia.

**Key words:** Adventitious shoot, adventitious root, regeneration, mung bean