

Increased heavy metal accumulation in transgenic tobacco that express of human ferritin genes

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Abstract

Ferritin is a class of iron storage and mineralization protein found throughout the animal, plant and bacteria. Ferritin molecule is a hollow protein shell, composed of 24 polypeptide chains and capable of storing up to 4,500 Fe(III) atoms as an inorganic complex. Ferritin can bind Fe, Cu, Zn, Pb, Cd, Be and Al in vivo and in vitro. This situation may prove to have detoxification benefit in cases of heavy metal poisoning. Tobacco plants were transformed by *A. tumefaciens* harboring human ferritin genes (light chain and heavy chain) and they were subjected to investigate for the expression of transformed gene as well as heavy metal accumulation. Seeds from self-fertilized transgenic plants were germinated on media containing toxic level of Cd, Cu, Zn, Fe, Mn and scored for tolerance to this heavy metals. There is difference in growth rate between transgenic and control plants. Transgenic plants accumulated more heavy metals than control plants.

References

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