

2,4,6-trinitrotoluene as a trigger of oxidative stress in *Fagopyrum tataricum* callus cells

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Abstract

Effect of 2,4,6-trinitrotoluene (TNT) on callus cells of Tartar buckwheat (*Fagopyrum tataricum* (L.) Gaertn.) was accompanied by six-electron reduction of ortho- or para-nitro groups of the xenobiotic with the production of 2-amino-4,6-dinitrotoluene (2-ADNT) and 4-amino-2-6-dinitrotoluene (4-ADNT). It was discovered that the xenobiotic TNT impairs integrity of cell membrane, which apparently results from its one-electron reduction coupled with production of nitro radical-anion and superoxide anion. © 2013 Pleiades Publishing, Ltd.

<http://dx.doi.org/10.1134/S1021443713030102>

Keywords

2,4,6-trinitrotoluene, callus, *Fagopyrum tataricum*, oxidative stress, reactive oxygen species