

**ACID PHOSPHATASE ACTIVITY IN SALT TREATED EMBRYOGENIC SUSPENSION  
CULTURES OF *DACTYLIS GLOMERATA* L.**

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**REFERENCES**

- Arab L., Ehsanpour A. (2006). The effects of ascorbic acid on salt induced alfalfa (*Medicago sativa* L.) in *in vitro* culture. *Biochemistry*, 18: 63-69.
- Bozo G., Raghothama K., Plaxton W. (2002). Purification and characterization of two secreted purple acid phosphatase isozymes from phosphate starved tomato (*Lycopersicon esculentum*) cell cultures. *European Journal of Biochemistry*, 269: 6278-6286.
- Bull H., Murray P., Thomas D., Fraser A., Nelson P. (2002). Acid phosphatases. *Molecular Pathology*, 55: 65-72.
- Conger B., Hanning G. (1991). Registration of Embryogen-P orchardgrass germplasm with a high capacity for somatic embryogenesis from *in vitro* cultures. *Crop Science*, 31 (3): 855.
- Deng S., Summers M. L., Kahn M. L., McDermott T. R. (1998). Cloning and characterization of a *Rhizobium meliloti* nonspecific acid phosphatase. *Archives of Microbiology*, 170: 18-26.
- Ehsanpour A., Amini F. (2003). Effect of salt and drought stress on acid phosphatase activities in alfalfa (*Medicago sativa* L.) explants under *in vitro* culture. *African Journal of Biotechnology*, 2: 133-135.
- Garcia T., Olivera M., Iribarne C., Lluch C. (2004). Partial purification and characterization of a non-specific acid phosphatase in leaves and root nodules of *Phaseolus vulgaris*. *Plant Physiology and Biochemistry* 42: 585-591.
- Laemmli U. K. (1970). Cleavage of structural proteins during the assembly of bacteriophage T4. *Nature*, 227: 680-685.
- Mohamed A. (2005). Two-dimensional electrophoresis of soluble proteins and profile of some isozymes isolated from maize plant in response to NaCl. *Research Journal of Agriculture and Biological Sciences*, 1: 38-44.
- Odjakova M., Somleva M., Tchorbadjieva M., Nikolaev N. (1992). Salt-induced changes in embryogenic callus development of *Dactylis glomerata* L. *Comptes rendus de L'Académie Bulgare des Sciences*, 45: 107-110.
- Sharma A., Singh N., Kang J. (2005). Short-term waretlogging-induced changes in phosphatase activities in shoots and roots of sorghum seedlings: role of phosphatases during waterlogging in relation to phosphorus. *General and Applied Plant Physiology*, 31: 71-79.
- Shenk R. U., Hildebrandt A. C. (1972). Medium and techniques for induction and growth of monocotyledonous and dicotyledonous plant cell cultures. *Canadian Journal of Botany*, 50: 199-204.
- Shin C., Kao C. (1998). Induction of acid phosphatase in detached rice leaves under stress conditions. *Botanical Bulletin of Academia Sinica*, 39: 29-32.
- Szabo-Negy A., Galbiba G., Erdei L. (1992). Induction of soluble phosphatases under ionic and non-ionic osmotic stress in wheat. *Journal of Plant Physiology*, 140: 629-633.
- Xiong L., Schumaker K, Zhu J. (2002). Cell signalling during cold, drought and salt stress. *The Plant Cell*, 14: 165-183.