عنوان مقاله:

Responsive inositol polyphosphate 5-phosphatase gene in salt stressed Aeluropus littoralis

محل انتشار:

کنفرانس بین المللی منابع طبیعی، مهندسی کشاورزی، محیط زیست و توسعه روستایی (سال: 1395)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Sahar Faraji - *Plant Breeding Department, Sari Agricultural Sciences and Natural Resources University(SANRU), Sari, Iran*

Hamid Najafi Zarrini - *Plant Breeding Department, Sari Agricultural Sciences and Natural Resources University(SANRU), Sari, Iran.*

Seyyed Hamid Reza Hashemi - *Genetics and Agricultural Biotechnology Institute of Tabarestan, Sari Agricultural Sciencesand Natural Resources University, Sari, Iran*

Gholam Ali Ranjbar - *Plant Breeding Department, Sari Agricultural Sciences and Natural Resources University(SANRU), Sari, Iran.*

خلاصه مقاله:

Soil salinization is a growing problem for agriculture worldwide. This constrain, similar to others biotic and abiotic stresses generate the reactive oxygen species. In the evolution process of halophyte plants remarkable ability to adapt to such condition have been developed. The adaptation process is mediated by an intracellular vesicle-trafficking system regulated by phosphatidylinositol (PtdIns) kinases and phosphatases. These membrane lipids function as major regulators of stress signaling. Aeluropus littoralis is a special halophyte that selected to our research, so the plants treated with 600 mM NaCl in a period 7 days, then recovery condition established by stress removing in 7 days. Experimental samples were prepared separately from the shoot and root tissues and their RNAs extracted for inositol polyphosphate 5-phosphatase (5PTase) activity assay by Real-Time PCR. Maximum expression of 5PTase gene was observed 24 h after recovery in shoot tissue with a rate of 14.8 fold higher than the control sample. One week after recovery this rate in root samples exhibited an increase of 10.3 fold higher compared to the control. Salt stress situation, also induced 5PTase activity, which was significant one week after stress in shoots with a level of 12.3 fold compared to the control. Generally, this gene revealed the best expression level in shoot tissue under both of stress and recovery circumstances.

کلمات کلیدی:

Aeluropus littoralis, inositol polyphosphate 5-phosphatase, salinity

لینک ثابت مقاله در پایگاه سیویلیکا: