

Comparison between two H⁺/Ca²⁺ cation exchangers CAX1 and CAX2 of Arabidopsis in functional aspect of growth and calcium accumulation in *Saccharomyces cerevisiae*

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H⁺/Ca²⁺ cation exchangers CAX1 and CAX2 of Arabidopsis has been well known for accumulation of cations in different tissues. We have used the yeast essays model to compare the impact of CAX1 and CAX2 on growth rate and calcium accumulation in different culture conditions. The whole length of CAX1 and CAX2 genes of Arabidopsis were cloned to a yeast shuttle vector pRS316 and were complimented in yeast mutant K667 (pmc1:TRP1 vcx1D) (Cunningham y Fink, 1996). The growth rate was monitored in YPDA and minimal medium and calcium accumulation was analyzed by confocal microscopy using floe 3. The CAX1 and CAX2 complimented mutants were found susceptible to higher calcium treatments and better growth rate were observed in rich (YPDA) as well as minimal medium in normal calcium concentration. It was also observed that, CAX1 variants were having higher growth rate in comparison to CAX2 phenotypes and accumulate high level of calcium. This result suggests that CAX1 is the better choice to use as calcium transporter compared to CAX2.

Keywords: cation exchanger, CAX1, CAX2, cation exchangers

Biography

Nutan Prasad Rout has completed his PhD at the age of 31 years from Institute of Life Sciences, Bhubaneswar, India and postdoctoral studies from Univesidad Autonoma de Mexico, Mexico. He is the reader in Biotechnology, CIATEJ, a premier Government Biotech Research Institute, in Mexico. He has published more than 10 papers in reputed journals and serving as an editorial board member of Biotech Colour Journal.

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