Mudassar Khan, Metabolomics 2013, 2:7
http://dx.doi.org/10.4172/2153-0769.S1.022

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Metabolomics & Systems Biology
April 08-10, 2013 Hilton Chicago/Northbrook, USA

Identification and sequencing of 18S rRNA gene in *Solanum lycopersicum*

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Internal reference genes are constitutively expressed in all cells to maintain their functions. Therefore these genes are very essential for ensuring cell viability. They are widely used for quantification controls and relate target gene levels to reference gene levels. These internal controls and their target sequences are naturally present in biological samples. They have tendency to undergo similar variations throughout the assay. Their importance increases due to specific nature of these internal controls, this is the limiting factor due to which study of the lots of biological functions and especially in plants are unknown under particular conditions.

S. lycopersicum genomic DNA was extracted using CTAB method.*18S rRNA* gene of S. lycopersicum was amplified using forward and reverse primers which were designed from the conserved regions of known *18S rRNA* gene from NCBI database. Approximately 230bp product was sequenced and checked for its use as potential internal control for transcript analysis. The sequence was analyzed using nBLAST tool to find out the similarities with other known *18S rRNA* sequences from NCBI. BLAST results have proved evolutionary relationship of our newly identified *18S rRNA* gene with the other monecotes and dicotes. The maximum homology was found 97%.

Phylogenetic tree was constructed based DNA alignment generated by Clustal W. Our results have shown a high level of conservation in the *18S rRNA* gene isolated from the diverse monocot and dicot plants. Gene expression analysis using these new *18S rRNA* primers can prove it as an exceptionally fine housekeeping gene. This newly identified gene sequence can be used as internal control for gene expression studies in other plants also.

Biography

Mudassar Khan has completed his M.Phil degree in Biochemistry & Molecular Biology at the age of 25 years from Quaid-I-Azam University, Pakistan and enrolled in Ph.D. in Biochemistry & Molecular Biology at University of Gujrat, Pakistan. He is the head of the Govt. Elementary School. He has the leading abilities. He has just started working on paper publishing. His target is to capture the journals of repute for his papers. He want to become a great scientist in the field of Biochemistry & Molecular Biology in future. He has good command on Apparatus like PCR, Gel Electrophoresis etc. He is very good player of Chess.

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