



Molecular cloning and tissue expression analyses of two novel pepper genes: heterotrimeric G protein beta 2 subunit and ArcA1

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ABSTRACT. We isolated two transcription factor genes, heterotrimeric G protein beta 2 subunit (G β 2) and ArcA1, from pepper (*Capsicum annuum*). The complete coding sequences were amplified using reversed transcriptase PCR based on conserved sequence information of *Solanum lycopersicum* and several other plant species. Nucleotide sequence analysis of these two genes revealed that the pepper G β 2 gene encodes a protein of 376 amino acids that belongs to the WD40 superfamily. Tissue expression analysis indicated that this gene is highly expressed in the pericarp, moderately expressed in stem, flower, placenta, and leaves, and weakly expressed in seed. There was no expression in the roots. The ArcA1 gene encodes a protein of 331 amino acids that also belongs to the WD40 superfamily. Tissue expression analysis indicated that the pepper ArcA1 gene is moderately expressed in the pericarp and weakly expressed in seed. There was no expression in root, stem, flower, placenta, or leaves.

Key words: *Capsicum annuum* L.; Heterotrimeric G protein beta 2 subunit; ArcA1; Gene expression profile