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IDENTIFICATION OF ALLIIN LYASE (ALLIINASE) GENES FROM IRANIAN ENDEMIC ALLIUM SPECIES: FIRST NEW REPORT

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Allium genus is one of the largest genera in the family of the Maryllidaceae. Alliin is a natural substrate of alliin lyase (alliinase) (EC 4.4.1.4); this enzyme converts alliin to allicin. The latter is unstable and quickly changed into other compounds such as diallyl disulfide. Allicin is an organosulfur composite which plays an important role in the treatment of different diseases. It has significant effects on the reduction of cholesterol, triglyceride, and lowering blood pressure. Its antimicrobial, antifungal, anticancer, antioxidant, and anti-inflammatory effects have also been reported. In the current report, identification and sequencing of alliinase genes from the fresh leaves are being reported for *Allium* species with first new report for Iranian endemic species. Eight different species include *Allium lenkoranicum, A. atroviolaceum, A. pesudoampelporasum, A. stipitatum, A. sativum, A. rubellum, A. stamineum*,and *A. umbellicatum*, were collected from various geographic locations of Iran.Genomic DNAs were isolated and then new primer pairs were designed. PCR was carried out with newly specific primers for alliinase genes. PCR amplifications were loaded onto 1% (w/v) agarose gel in a 1x TAE running buffer, stained with 1 μg ml^{-1} ethidium bromide. Its products were purified and sequenced.

Keywords: Allium L., Alliin Lyase (alliinase), PCR, Gene sequencing