

## Isolation and Identification of Diacylglycerol Acyltransferase Type-2 (GAT2) Genes from Three Egyptian Olive Cultivars

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**Abstract :** Aim of this work was to study the genetic basis for oil accumulation in olive fruit via tracking DGAT2 (Diacylglycerol acyltransferase type-2) gene in three Egyptian Origen Olive cultivars namely Toffahi, Hamed and Maraki using molecular marker techniques and bioinformatics tools. Results illustrate that, firstly: specific genomic band of Maraki cultivars was identified as DGAT2 (Diacylglycerol acyltransferase type-2) and identical for this gene in *Olea europaea* with 100 % of similarity. Secondly, differential genomic band of Maraki cultivars which produced from RAPD fingerprinting technique reflected predicted distinguished sequence which identified as DGAT2 (Diacylglycerol acyltransferase type-2) in *Fragaria vesca* subsp. *Vesca* with 76% of sequential similarity. Third and finally, specific genomic specific band of Hamed cultivars was indentified as two fragments, 1-*Olea europaea* cultivar Koroneiki diacylglycerol acyltransferase type 2 mRNA, complete cds with two matches regions with 99% or 2-PREDICTED: *Fragaria vesca* subsp. *vesca* diacylglycerol O-acyltransferase 2-like (LOC101313050), mRNA with 86% of similarity.

**Keywords :** *Olea europaea*, fingerprinting, diacylglycerol acyltransferase type-2 (DGAT2), Egypt

**Conference Title :** ICASTE 2014 : International Conference on Agricultural Science, Technology and Engineering

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** December 22-23, 2014