

Nucleotide sequence of an ethylene-regulated gene from tomato

M.J.Holdsworth, W.Schuch¹ and D.Grierson

Department of Physiology and Environmental Science, University of Nottingham School of Agriculture, Sutton Bonington, Loughborough LE12 5RD and ¹ICI Plant Biotechnology Group, PO Box 11, The Heath, Runcorn, Cheshire WA7 4QE, UK
Submitted October 12, 1987

Accession no.Y00478

mRNAs complementary to a tomato ripening-related cDNA (pTOM 13) have been shown to be expressed during fruit ripening and following wounding in leaves and fruit (1), responses both involving ethylene synthesis. The nucleotide sequence and derived amino acid sequence of a pTOM 13 related gene (designated GTOMA) from tomato is presented. RNA dot-blot analyses have shown that this gene is only expressed in wounded leaves (2).

AGGCTAAGCAGATGAACCAAGAACTTAAAAAATAATTGTAAATTTCTTATCTATATAAAGTAAACATAACATAAATTTACCAAAAAAAAAATTTATAATAAATAAAGTAAT 120
CCCTATAAAGTGATTAATCATATTGAGAACCCAAAATTTATATATTTCTACTGAAATTTAACTTTTATAGTAAATCCATTGGCCCAACCTAGTGTGGATACCACATTTCAATTTATAT 240
ATATTCCCTACTAGCTATATATGATTTATTTCCCTATAAATACCCAAAACAAAGGCTCAATCTTTACACACACACCAAAAAAGAACTCACTTTCAATATCTTCCATCTTTTATGCC 360
M E N F P I I N L E K L N G A E R V A
ACACACTTATTTACTCTAAAAAGAAAAAACAACATTTTCTCTATTTCTCAAGAAATTAATAATGGAAATTTCCCAATATCAACTTGGAAAACTCAATGGCTGAGAGAGTAGC 480
T M E K I N D A C E N W G G F F E
CACAAATGGAAAAATTAATGATGCTTGTGAAAAATGGGGCTTCTTTGGAGTACAAATATTTATAAATAAAGTAACTCAATATCGATATATTTTAAATTTGAATTAACBACCCATTC 600
AATAAATTTTCTTATGCTTTTTTTTTTAAAAAATGTGCCTTATGGCCTTGGTGGTGGAGCTAGAGTGTCCACCTCCGATTCAAATTTGTATTTGCTTAAAAACATCTTTTAA 720
ATACATATATTTAACTTAAACCTAATATTTATAATTTAGATTTCTGATTCBACCLCTGGTCTTATTCATAAAAAATACTAAGGTTTTTTTTTAAATGTAATCTTGGAAAAATATA 840
L V N H G I P H E V M D T V E K L T K G H Y K K G C M E Q R F K E
TACATTTTTTTTAAATGTATAGTGTGGTGGAGTGGAAATCCACATGAGTGTGGACACTGTGGAGAAATTAACCAAGGACATTACAGAGGTTATGGAACCAAGGATTTAAGAAAT 960
L V A K K G L E V E V E V T D M D W E S T F F L R H L P S S N I S L P L D L D
TGSTTCTAAGAAAGGACTGGAAGGTGTTGAAGTGAAGTACTGATGATGAAATGGAAAGTACTTTTTCTTGAGGCACTCCCTCTCTCAATATCTCTCAACTACTGATCTTGATG 1080
D V Y R
ATGTATATAGTAACTCCDAACTCAAGTACGCTGATTTTTTTCATCTGTCTAAGTTTTGATCGATGGTGGAGCCAGTATAAGAAAAAGGAAACACAATTTGAATAACCTTCGCCAGAA 1200
AATTAATAAAAAAACAATTTCCGCTATGTATATAAATCTTGAATTTTTTTTATAACACTAGTAAATATATAGGTTTAAATCTCAAGTTAATATTTTTCTAAACCTCGTATTAAT 1320
TATGCTGTATCATATCTAGATTTATAAAAAGCAAAATTAATACGATATATTTTTTATATAAAGTAAACATGATTTATAAGTATAAGTGTCCAACTTTGCCAGCTTGGTGGACCAAG 1440
ATCCCAATATAGTATTTTATAGTAGGACCAACATGATTTTTTTTTTAAAACTATAAGTCTATATATAAACAATATGTTTTCCACCTCTCAACCTTATTTATATGTATATTTA 1560
ATTTGCTCTTTTGTGTTGTTGGTGGGGTCCACATGACTTTGGACTGAGACTGACCACTAATAGAACTATCATAATAAACAAGAACTATAGTAGGATCACTTCAAGAAAAAT 1680
TAGAATTAATAAATAAATTCATCCTTAATCCTATTAGCAGTAAATTTAAAAAGTCTTATTCAGCAACGGTCTATTAGAGACAAAAATGATAAAAAATCATAGTTAATTTCTTATTTTT 1800
GTATAATACATAGTGTGGAGCAGAGATAGAGTGTCAATAGGTTGAAAGTGTGATTTGAAATTTCCATAGTAAATCTGCGCTCGATGATATGTTTATATGATGTAGGGGAG 1920
U M R D F R K R L E K L L E L L D L L C E N L G L E K S Y L K N T F Y G S K G
TTATGAGGATTTTGTAAAAATAGAGAGTATAGCAGAGAACTCTGGATTTGCTTTGTGAAAACTTGGACTAGAAAAAGTACTTAAAAATACATTTTATGGCTCAAAAGGTC 2040
P N F G T K V S N Y P P C P K P D L I K G L R A H T D A G G I I L L F Q D D K V
CAAAATTTGGGACTAAAGTAACTATCCACCATGTCAAAACCTGATCTAATAAAGGGGTTGCTGTCACATACTGATGCTGGTGGCATAAATCTCTCTCCAAAGATGACAAGGTGA 2160
S G L Q L L K D G R W I D U P P M R H S I V U V N L G D Q L E
GTGGCTCAACCTCCTCAAGCAGCTGATGATGATGATGCTCCDCTCCDCACTCCATGCTGGTAACTAGTGGACCACTCGAGTAAAAATCTTTAAAAATGCTTATTGAGC 2280
TTACTTCACTGAAATTTAACTTTTATATACTGATAATACTAGAACAAAGAAAGTTGAGTCAGATAAACAATGACTTTTTGTTGGTGGAGCCCAAGTGTGGATCATATCATGT 2400
GGACTATAAATGAAATATGCTCCACATTTTATACATTTGAGCATGACATACATCTTTCTTATGATAGTCTCTTATGTAAGTGGTCCGCAAGGTTAAACCAAGCAGATACATAAAT 2520
GTCCATAAAGTCTAGTACGCAAGCACTGATATAACATGTTACATATACTGATAGTATGATAGTATAAACAATACTTTATATACTTATGATGATATAGGCTCAATCCT 2640
V I T N G K Y K S V M H R V I A Q K D G T R H S L A S F Y N P G N D A L I Y
TAAACAGTAAATCACACAGGAGTACAGAGTGTGATGCATAGAGTGTGATGCACAAAAAGAGGAGTGGTGTGATTTAGCATTCTTACAAATCCAGGAATGATGATGATGATCTA 2760
P A P A L U D K E A E E H N K Q V Y P K F M F D D Y M K L Y A N L K F Q A K E P
TCCAGCACCAGCTAGTGTATAAAGAGGAGAGACATAACAACAAGTTTACCCTAAATTTATGTTTGTGATGATACATGAAATATATGCTAATCTCAAAATTCAGGCCAAGAGCC 2880
R F E A M K A M E S D P I A I A
AAGATTTGAGCCATGAAAGCTGTAAGAGTGTCAATTTGCAATTTGCTAGATTAATAAATAAAAAATTTGAAAGAAAAATTTATTTGTTATTGACATACATATTTGATTTTTTTTTT 3000
AAGTATAGTGAATTTATATATTTTTTATACAAAGTGTGCTCCTCACTACATGTGTGTAAGAGGAGTAAAGTTGTATCTTACACATATTTAATACCAAAAAATGAGATGTTGTTTC 3120
TGTTTTCTAAATGTTTTTTTCTTAAATTTTTTTTCTTAAATCTTATACATGATGTTGAAATTTCTTATACAGTGTAAATTTTATAGCTAAATCGGTTGATCAAGGTTGGCTTCBCTAGT 3240
GTAAGAGAGATATATGTCAGAGTCTACGATAGACCAATGATGGACCAATGATGATTTTACTGTTTCAATTTAATGTAATCTGTTTGTCTCAGCATGAAATGTTGAAAAAA 3360
AATTTGAGACTTTAAAAATGATTTTTTAAATGTGATACATGAT 3480
CTTATCATTAAAGATAAATAAATAAAGAAATAAATAAAGATTT

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2. Holdsworth, M.J., Schuch, W., Grierson, D. (1987) manuscript submitted.