

## Appendix A

The results of RT-qPCR, in terms of CT values for wild type plants, plants over-expressing *At-SKIP11* gene and the plants expressing *At-SKIP11*-antisense sequence, are given below in the table A-1 to A-3.

Tables A1-1 to A1-3 show the calculation of changes in the gene expression levels of the target genes in the plants over-expressing *At-SKIP11* gene and the plants expressing *At-SKIP11*-antisense sequence compared to the control plants.

Table A-1 CT values, average CT values and the SD values calculated from the RT-qPCR data for the normalizer gene and the target genes in cDNA samples from *At*-WT (calibrator) plants

Gene name	Line-1		Line-2		Line-3		Average CT	SD $\pm$
	Replicate1 (CT)	Replicate2 (CT)	Replicate1 (CT)	Replicate2 (CT)	Replicate1 (CT)	Replicate2 (CT)		
Actin2	23.25	22.72	22.38	22.52	22.53	22.11	22.59	0.38
Lox2	24.77	24.47	24.57	24.6	24.64	25.2	24.71	0.26
HPL	26.19	25.74	25.44	25.22	25.74	25.76	25.68	0.33
ADH1	30.59	30.08	30.08	30.03	30.08	29.62	30.08	0.31

Table A-2 CT values, average CT values and the SD values calculated from the RT-qPCR data for the normalizer gene and the target genes in cDNA samples from *At*-SKIP11 over-expressing plants

Gene name	Line-1		Line-2		Line-3		Average CT	SD $\pm$
	Replicate1 (CT)	Replicate2 (CT)	Replicate1 (CT)	Replicate2 (CT)	Replicate1 (CT)	Replicate2 (CT)		
Actin2	22.68	22.58	22.41	22.22	22.07	21.98	22.32	0.28
Lox2	25.8	25.62	25.38	25.43	24.93	24.68	25.31	0.42
HPL	25.68	25.64	25.64	25.45	26.09	26.63	25.86	0.43
ADH1	31.29	31.11	31.08	31.32	31.06	30.92	31.13	0.15

Table A-3 CT values, average CT values and the SD values calculated from the RT-qPCR data for the normalizer gene and the target genes in cDNA samples from *At-SKIP11*- antisense expressing plants

Gene name	Line-1		Line-2		Line-3		Average CT	SD $\pm$
	Replicate1 (CT)	Replicate2 (CT)	Replicate1 (CT)	Replicate2 (CT)	Replicate1 (CT)	Replicate2 (CT)		
Actin2	22.5	22.25	22.09	22.03	22.01	22.31	22.20	0.19
Lox2	24.82	24.53	24.63	24.6	24.24	24.69	24.59	0.20
HPL	25.77	25.64	24.74	24.72	24.61	24.66	25.02	0.53
ADH1	28.85	28.91	28.76	28.82	29.03	29.16	28.92	0.15

Table A1-1 Stepwise calculation of the changes in the expression levels of LOX2

Sample	$\Delta CT$	$\Delta \Delta CT$ (with SD)	$2^{-\Delta \Delta CT}$
Wild Type	2.12	-----	-----
<i>At</i> -SKIP11 over-expressing	2.98	0.86 ( $\pm 0.5$ )	-1.82 (-2.58-1 - -28)
<i>At</i> -SKIP11-antisense expressing	2.39	0.26 ( $\pm 0.28$ )	-1.20 (-1.45 - 1.01)

Table A1-2 Stepwise calculation of the changes in the expression levels of HPL

Sample	$\Delta CT$	$\Delta \Delta CT$	$2^{-\Delta \Delta CT}$
Wild Type	3.10	-----	-----
<i>At</i> -SKIP11 over-expressing	3.53	0.43 ( $\pm 0.52$ )	-1.35 (-1.35 – 1.05)
<i>At</i> -SKIP11-antisense expressing	2.83	-0.27 ( $\pm 0.56$ )	1.20 (-1.22 – 1.79)

Table A1-3 Stepwise calculation of the changes in the expression levels of ADH1

Sample	$\Delta CT$	$\Delta \Delta CT$	$2^{-\Delta \Delta CT}$
Wild Type	7.50	-----	-----
<i>At</i> -SKIP11 over-expressing	8.81	1.31 ( $\pm 0.32$ )	-2.48 (-1.99 - -3.10)
<i>At</i> -SKIP11-antisense expressing	6.72	-0.77 ( $\pm 0.24$ )	1.71 (1.44 – 2.01)

## Appendix B

Table B-1 Mass abundance of each line, average mass abundance and RSD values of different GLV for each type of plants.

### (a) Hexanal

Sample	Line-1	Line-2	Line-3	Average	RSD
At-WT Plants	45585001	46581910	49680052	47282321	4.5
XN Plants	19288461	19704621	15563546	18185543	12.5
XA Plants	30010598	35845433	30067618	31974550	10.5

### (b) (E)-2-Pentenal

Sample	Line-1	Line-2	Line-3	Average	RSD
At-WT Plants	113444978	73518200	75870961	87611380	25.5
XN Plants	16912747	33915526	37464070	29430781	37
XA Plants	63964869	49805142	72655153	62141721	18.5

### (c) 1-Penten-3-ol

Sample	Line-1	Line-2	Line-3	Average	RSD
At-WT Plants	241863463	338466792	359369765	313233340	20
XN Plants	49110179	42036601	51967988	47704923	10.7
XA Plants	91860649	83639958	132434660	102645089	25.4

### (d) 1-Hexanol

Sample	Line-1	Line-2	Line-3	Average	RSD
At-WT Plants	49027469	71867244	72922205	64605639	20.9
XN Plants	23394990	25680250	35487242	28187494	22.8
XA Plants	66183548	59512647	59027908	61574701	6.5

### (e) (Z)-3-Hexen-1-ol

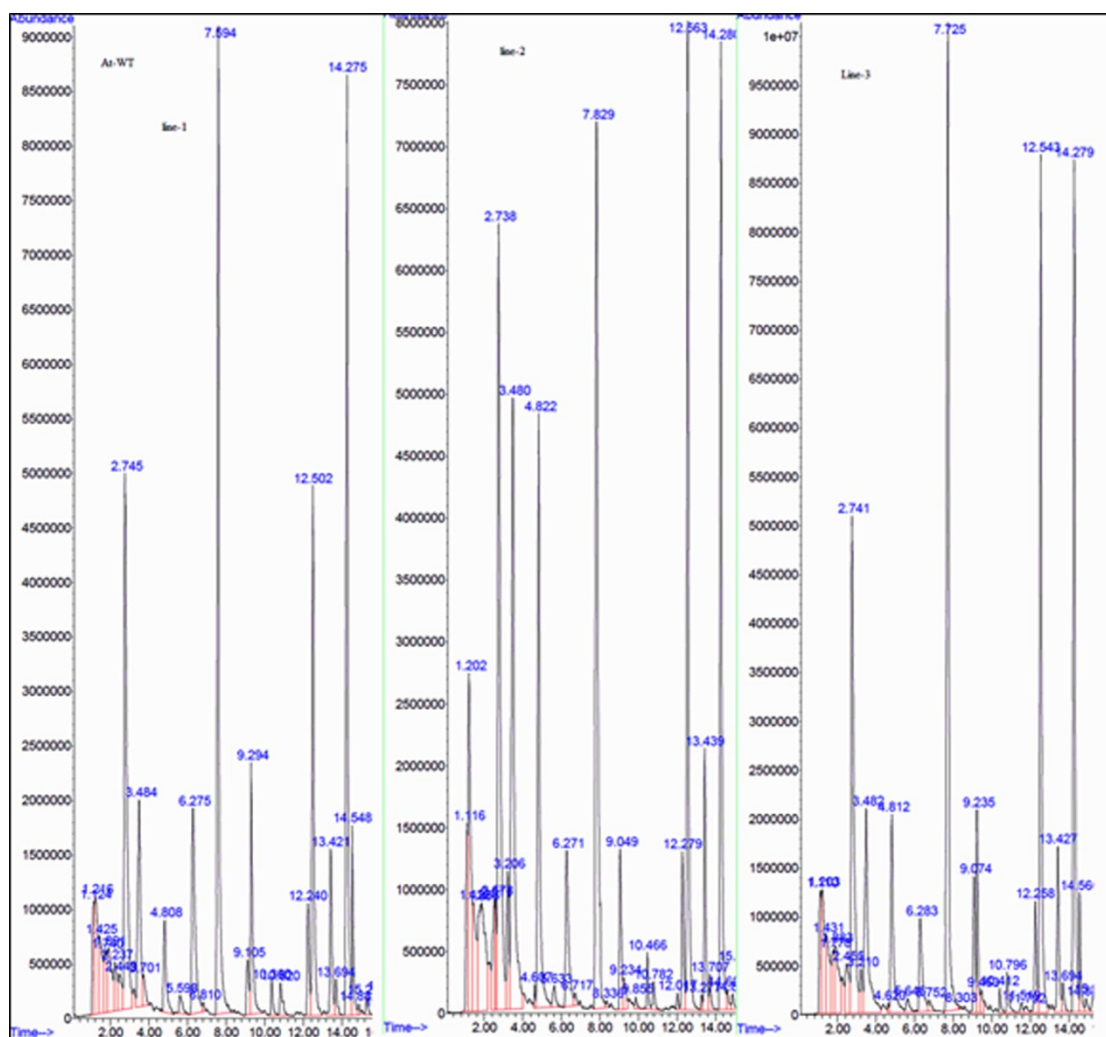
Sample	Line-1	Line-2	Line-3	Average	RSD
At-WT Plants	262078433	289041429	270964567	274028143	5
XN Plants	114373999	148205454	112404959	124994804	16
XA Plants	333515238	343876023	335347502	337579587	1.6

(f) 1-pentanol

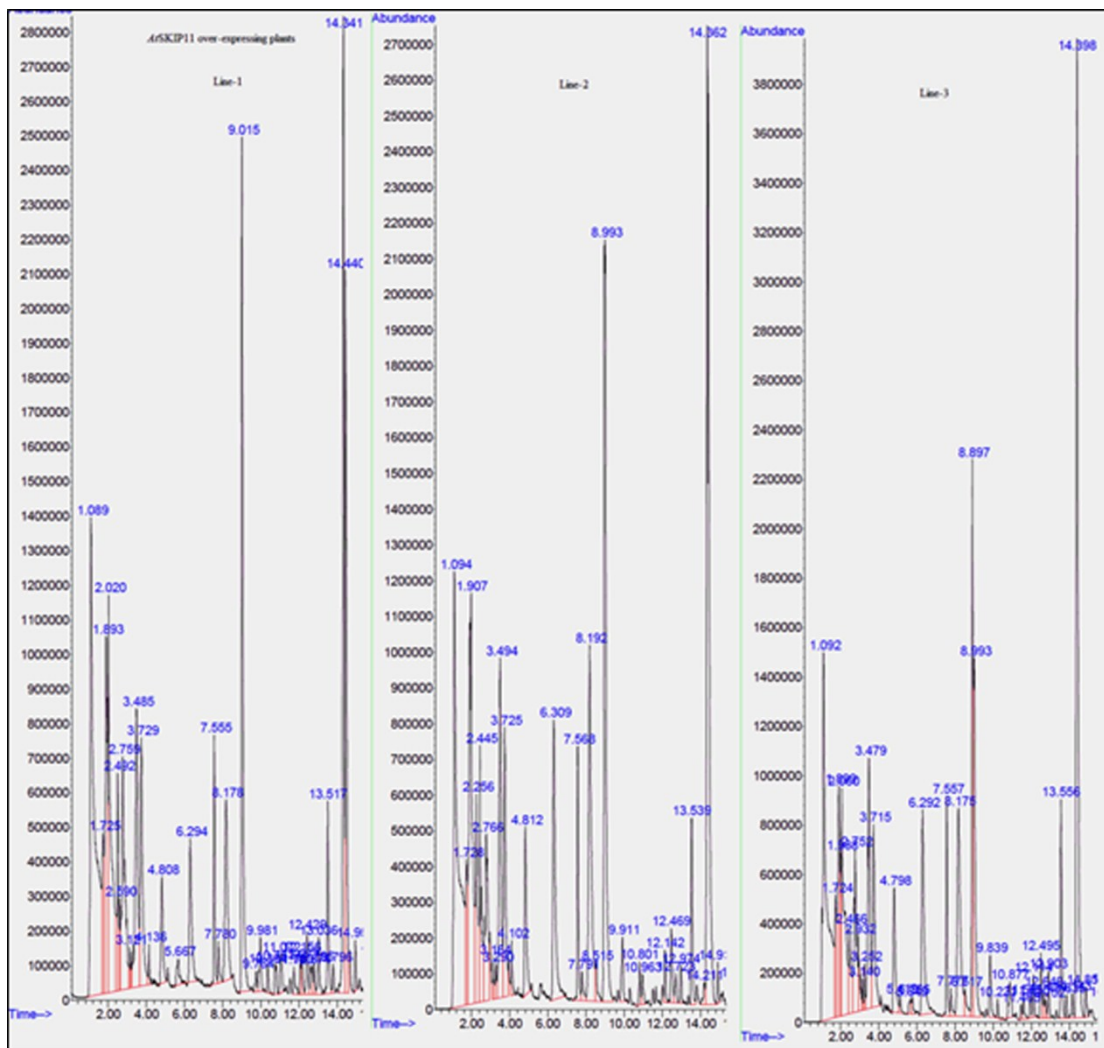
Sample	Line-1	Line-2	Line-3	Average	RSD
At-WT Plants	16470680	13953389	14480109	14968059	8.9
XN Plants	7240987	5985587	8924553	7383709	20
XA Plants	12182263	9916554	6213437	9437418	31.9

Figure B1 GC-MS chromatograms after extraction of the volatiles through SPME

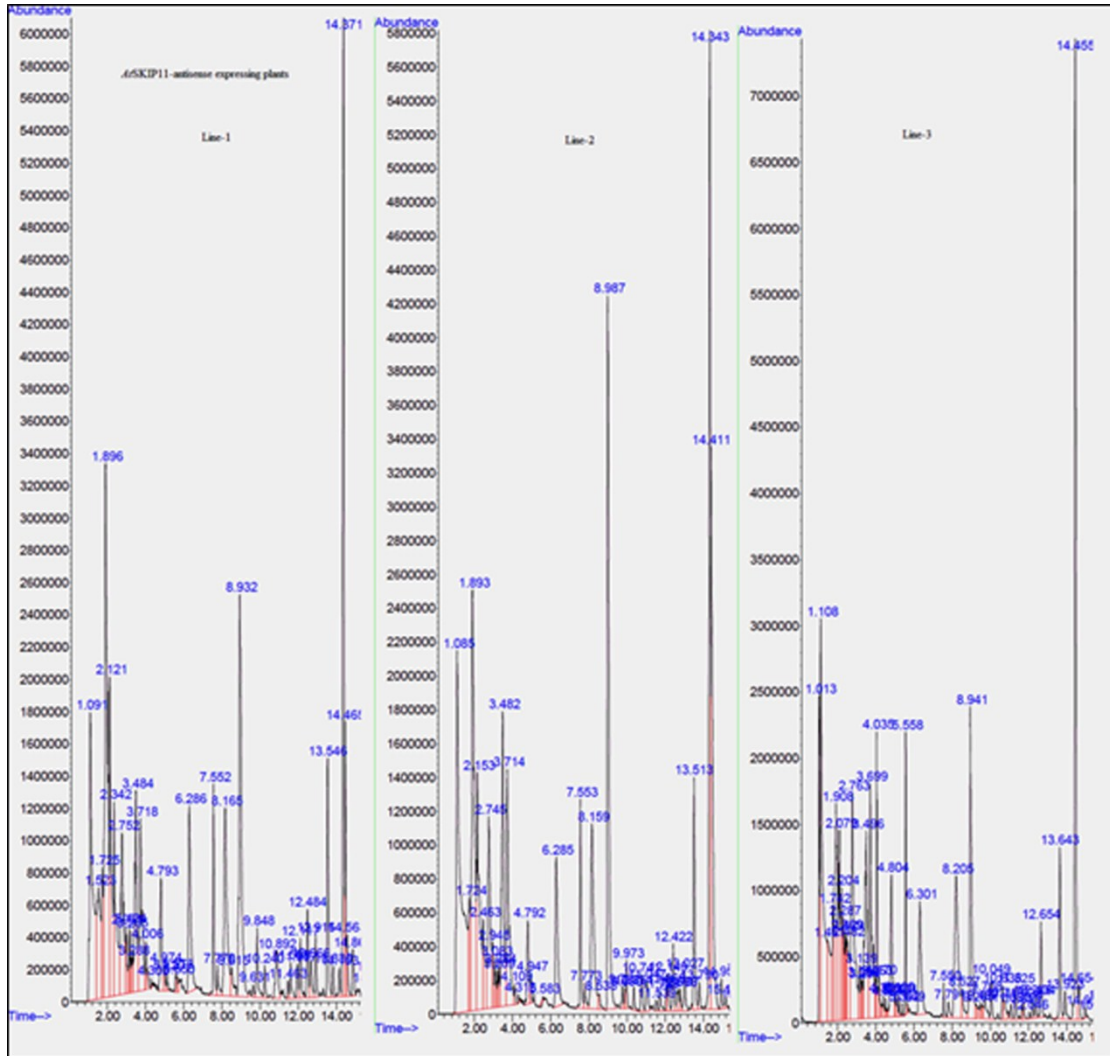
(a) Wild type



(b) *At*-SKIP11 overexpressing



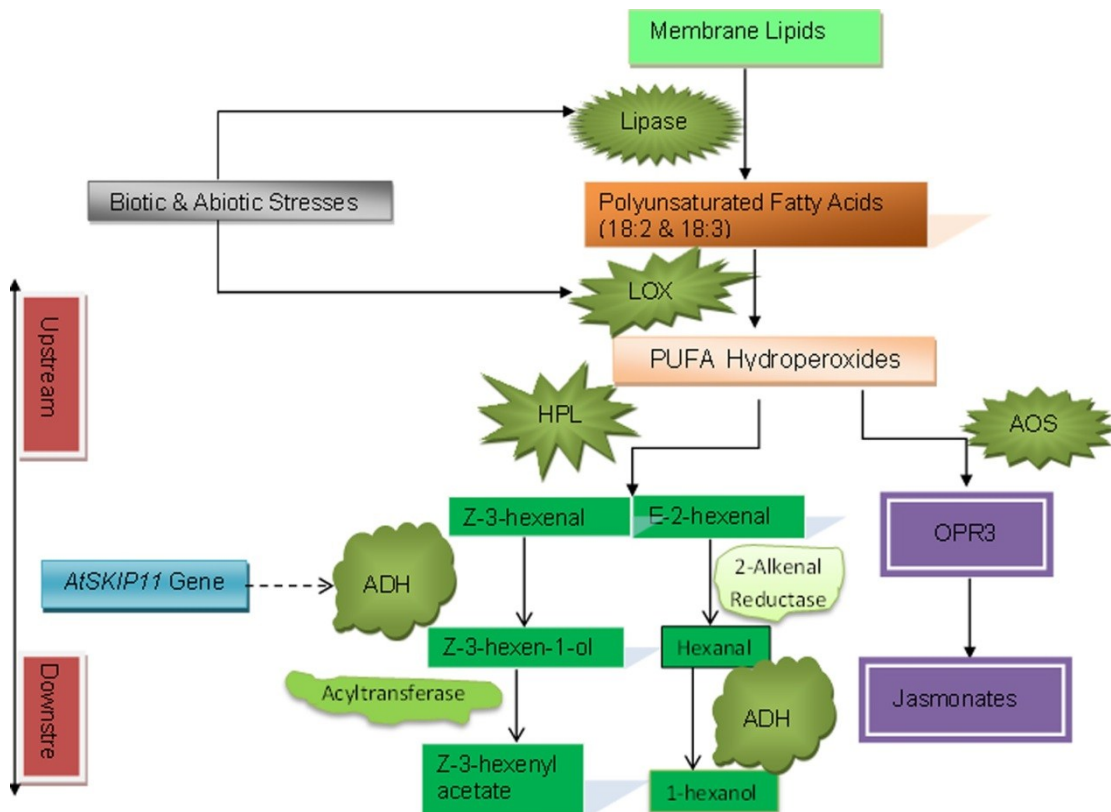
(c) *At*-SKIP11-antisense





## Appendix C

Enzymes, substrates and the products of phytoxylin pathway



Hassan, Muhammad Naeem, Zamri Zainal, and Ismanizan Ismail. "Green leaf volatiles: biosynthesis, biological functions and their applications in biotechnology." *Plant biotechnology journal* 13.6 (2015): 727-739.