

## Supplementary Table S2.

*Downregulated gene profile in human breast cancer MCF-7 cells with fucoxanthinol (FxOH) treatment.<sup>a</sup>*

No.	Gene symbol	Description	Fold <sup>b</sup>	p-Value <sup>c</sup>
1	<i>HIST1H2BM</i>	Histone cluster 1, H2bm	-71.2	2.6 × 10 <sup>-7</sup>
2	<i>PRR15L</i>	Proline rich 15-like	-31.1	4.7 × 10 <sup>-6</sup>
3	<i>CACNG4</i>	Calcium channel, voltage-dependent, gamma subunit 4	-30.8	4.3 × 10 <sup>-9</sup>
4	<i>MYB</i>	v-Myb avian myeloblastosis viral oncogene homolog	-30.4	1.1 × 10 <sup>-8</sup>
5	<i>RLN2</i>	Relaxin 2	-27.7	1.8 × 10 <sup>-10</sup>
6	<i>AOX1</i>	Aldehyde oxidase 1	-27.6	1.8 × 10 <sup>-10</sup>
7	<i>SCUBE2</i>	Signal peptide, CUB domain, EGF-like 2	-25.5	9.1 × 10 <sup>-9</sup>
8	<i>ADORA1</i>	Adenosine A1 receptor	-25.4	6.2 × 10 <sup>-10</sup>
9	<i>HMCN1</i>	Hemicentin 1	-24.5	5.0 × 10 <sup>-9</sup>
10	<i>SLC26A2</i>	Solute carrier family 26 (anion exchanger), member 2	-23.5	2.0 × 10 <sup>-10</sup>
11	<i>KIAA1324</i>	KIAA1324	-23.5	3.9 × 10 <sup>-10</sup>
12	<i>HIST1H1B</i>	Histone cluster 1, H1b	-23.1	3.5 × 10 <sup>-9</sup>
13	<i>TOP2A</i>	Topoisomerase (DNA) II alpha	-23.1	7.0 × 10 <sup>-10</sup>
14	<i>GREB1</i>	Growth regulation by estrogen in breast cancer 1	-20.9	2.2 × 10 <sup>-8</sup>
15	<i>NCAM2</i>	Neural cell adhesion molecule 2	-20.3	5.5 × 10 <sup>-10</sup>
16	<i>IGSF3</i>	Immunoglobulin superfamily, member 3	-18.9	1.3 × 10 <sup>-8</sup>
17	<i>RFTN1</i>	Raftlin, lipid raft linker 1	-16.6	7.2 × 10 <sup>-10</sup>
18	<i>PMP22</i>	Peripheral myelin protein 22	-16.6	2.5 × 10 <sup>-9</sup>
19	<i>FREM2</i>	FRAS1 related extracellular matrix protein 2	-16.5	1.4 × 10 <sup>-8</sup>
20	<i>NR2F2</i>	Nuclear receptor subfamily 2, group F, member 2	-16.4	6.9 × 10 <sup>-10</sup>
21	<i>ZFP36L2</i>	ZFP36 ring finger protein-like 2	-15.2	1.7 × 10 <sup>-8</sup>
22	<i>IGFBP5</i>	Insulin like growth factor binding protein 5	-14.8	4.3 × 10 <sup>-6</sup>
23	<i>MBNL3</i>	Muscleblind-like splicing regulator 3	-14.7	1.8 × 10 <sup>-9</sup>
24	<i>RBL2</i>	Retinoblastoma-like 2	-14.7	1.1 × 10 <sup>-9</sup>
25	<i>TRPS1</i>	Transcript Identified by AceView, Entrez Gene ID(s) 7227	-14.4	1.1 × 10 <sup>-8</sup>
26	<i>CCNF</i>	Cyclin F	-14.3	8.2 × 10 <sup>-10</sup>
27	<i>ST8SLA4</i>	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 4	-14.3	1.2 × 10 <sup>-8</sup>
28	<i>CDK1</i>	Cyclin-dependent kinase 1	-14.2	1.3 × 10 <sup>-9</sup>
29	<i>GFRA1</i>	GDNF family receptor alpha 1	-14.2	1.3 × 10 <sup>-9</sup>
30	<i>TMEM150C</i>	Transmembrane protein 150C	-14.1	7.7 × 10 <sup>-9</sup>
31	<i>SH3BGRL</i>	SH3 domain binding glutamate-rich protein like	-13.7	2.4 × 10 <sup>-9</sup>
32	<i>EPHA4</i>	EPH receptor A4	-13.7	9.5 × 10 <sup>-10</sup>
33	<i>ESR1</i>	Estrogen receptor 1	-13.6	7.3 × 10 <sup>-9</sup>
34	<i>IL1R1</i>	Interleukin 1 receptor, type I	-13.6	7.7 × 10 <sup>-8</sup>
35	<i>PROM2</i>	Prominin 2	-13.5	1.0 × 10 <sup>-8</sup>
36	<i>SFXN2</i>	Sideroflexin 2	-13.4	1.0 × 10 <sup>-9</sup>
37	<i>ST8SLA6</i>	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 6	-13.2	4.7 × 10 <sup>-7</sup>
38	<i>ABAT</i>	4-Aminobutyrate aminotransferase	-13.1	4.3 × 10 <sup>-7</sup>
39	<i>SPDEF</i>	SAM pointed domain containing ETS transcription factor	-12.9	1.2 × 10 <sup>-7</sup>
40	<i>SLC24A3</i>	Solute carrier family 24 (sodium/potassium/calcium exchanger), member 3	-12.6	2.1 × 10 <sup>-7</sup>

41	<i>FAM234B</i>	Family with sequence similarity 234, member B	-12.5	$3.9 \times 10^{-9}$
42	<i>E2F8</i>	E2F transcription factor 8	-12.2	$3.9 \times 10^{-8}$
43	<i>PRLR</i>	Prolactin receptor	-12.2	$1.2 \times 10^{-7}$
44	<i>AKAP5</i>	A kinase (PRKA) anchor protein 5	-12.0	$2.6 \times 10^{-7}$
45	<i>ANXA9</i>	Annexin A9	-11.8	$1.4 \times 10^{-8}$
46	<i>CAV1</i>	Caveolin 1	-11.6	$1.4 \times 10^{-8}$
47	<i>ATP2A3</i>	ATPase, Ca <sup>++</sup> transporting, ubiquitous	-11.6	$8.9 \times 10^{-9}$
48	<i>LMNB1</i>	Lamin B1	-11.5	$1.8 \times 10^{-8}$
49	<i>TRGJ1</i>	T cell receptor gamma joining 1	-11.3	$6.1 \times 10^{-9}$
50	<i>NBEAL2</i>	Neurobeachin like 2	-11.1	$4.1 \times 10^{-6}$
ECM receptor interaction signal				
	<i>COL5A1</i>	Collagen, type V, alpha 1	-3.1	$2.0 \times 10^{-5}$
	<i>LAMA5</i>	Laminin, alpha 5	-5.6	$5.2 \times 10^{-5}$
	<i>FN1</i>	Fibronectin 1	-3.4	$5.3 \times 10^{-5}$
	<i>THBS1</i>	Thrombospondin 1	-7.9	$1.9 \times 10^{-8}$
	<i>DAG1</i>	Dystroglycan 1	-6.5	$1.4 \times 10^{-8}$
	<i>ITGB5</i>	Integrin beta 5	-4.7	$9.6 \times 10^{-8}$
	<i>LAMB1</i>	Laminin, beta 1	-3.2	0.0007
	<i>AGRN</i>	Agrin	-3.7	0.0002
	<i>HMMR</i>	Hyaluronan-mediated motility receptor	-3.2	0.0006
	<i>CD47</i>	CD47 molecule	-3.8	$4.6 \times 10^{-6}$
	<i>LAMB2</i>	Laminin, beta 2	-2.7	0.0002
	<i>SDC1</i>	Syndecan 1	-2.9	$2.8 \times 10^{-6}$
	<i>ITGB4</i>	Integrin beta 4	-2.5	$7.1 \times 10^{-6}$

<sup>a</sup> Among all 1,966 downregulated genes with significant alterations, the top 50 genes (fold) with 13 genes belonging to ECM receptor interaction signal were shown. <sup>b</sup> Fold change of gene expression in MCF-7 cells with FxOH treatment, compared with that of control cells. <sup>c</sup> Significant difference between MCF-7 cells with and without FxOH treatment using one-way ANOVA ( $n=3$ ).