

Figure S1

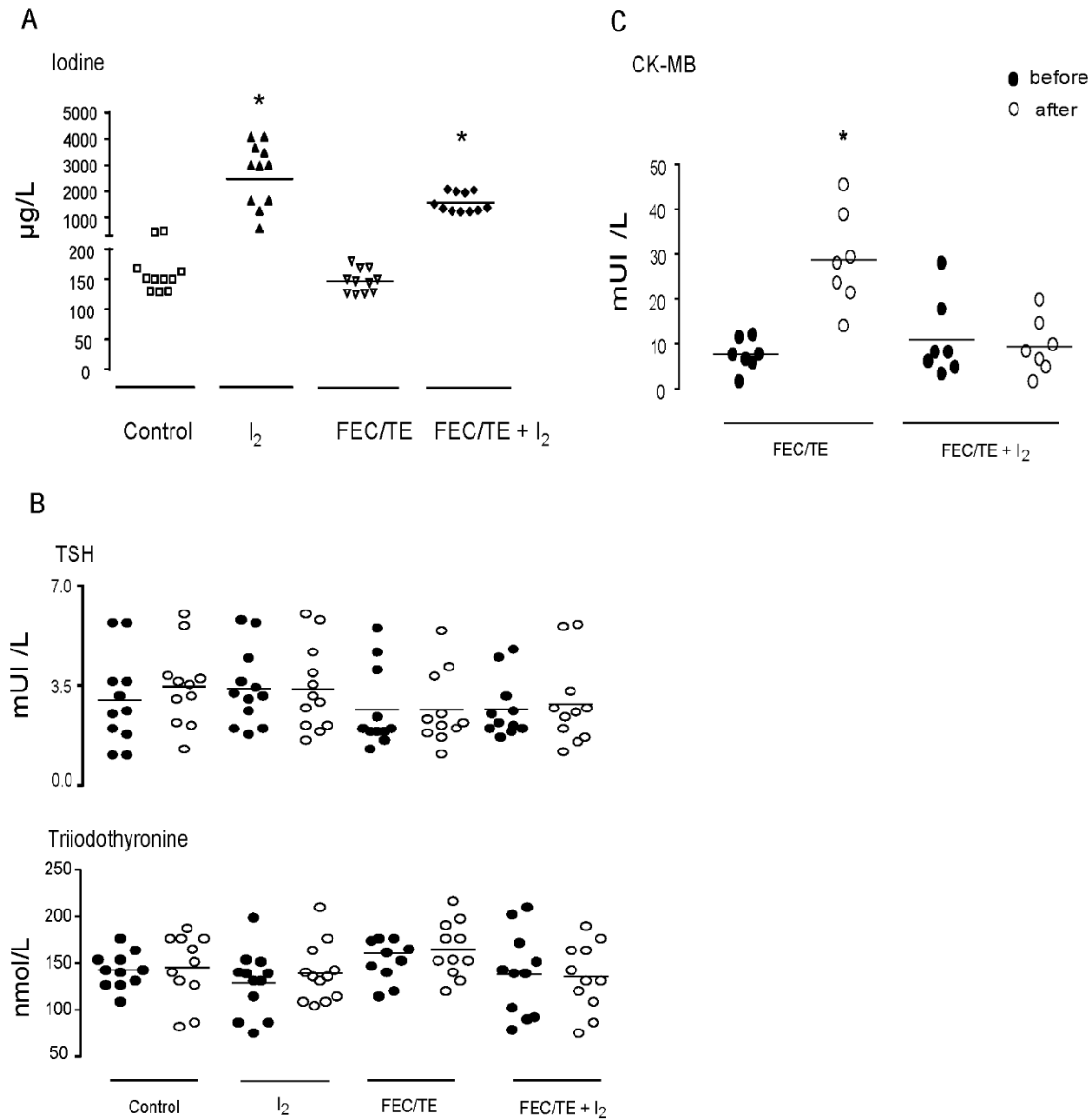


Figure S2

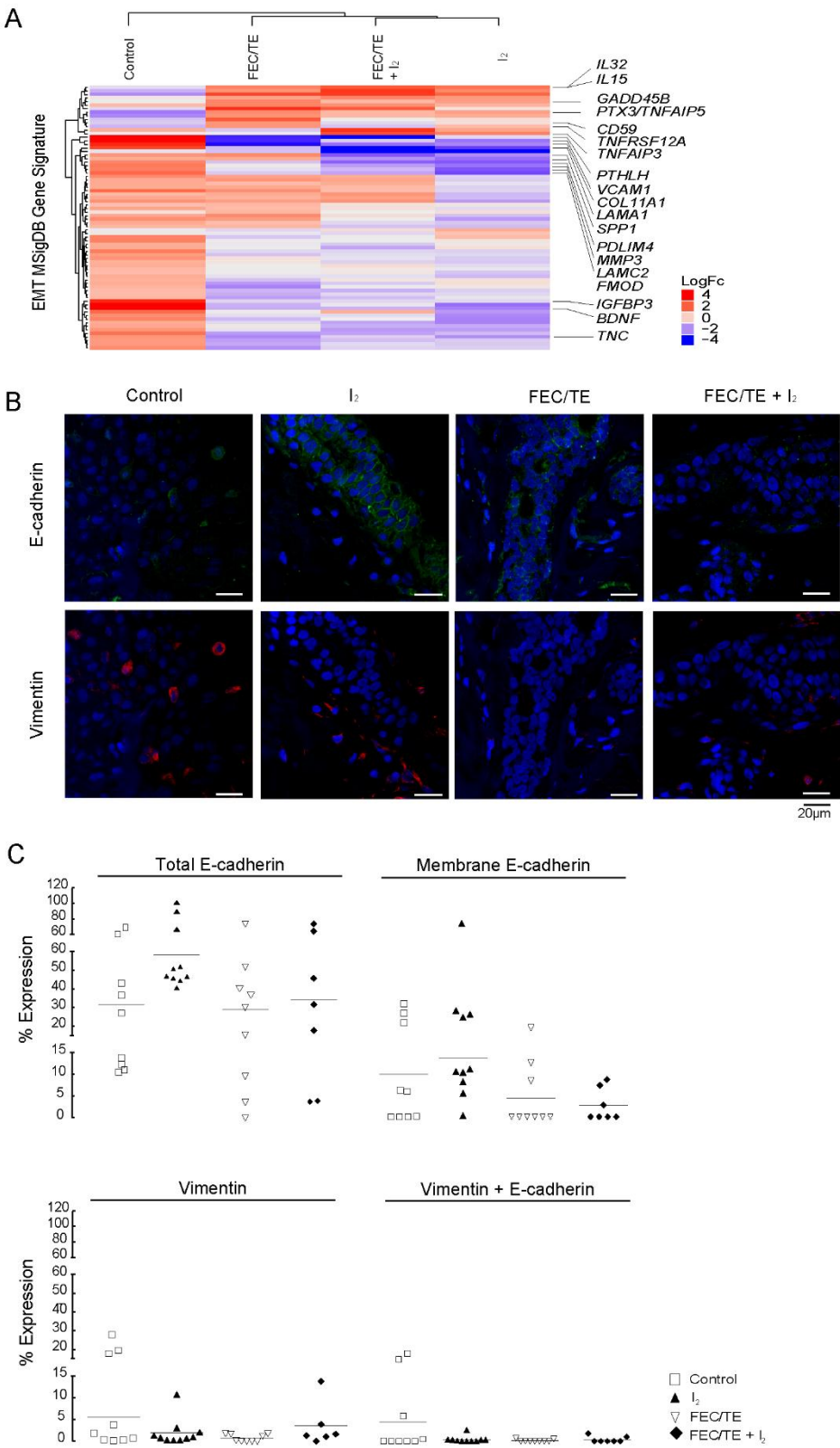


Table S1. Oligonucleotides used for RT-qPCR

Gene	Reference	Sense	Antisense	bp
<i>CDKN1A</i>	NM_001291549.1	GACCATGTGACCTGTCACT	GCGGATTAGGGCTTCCTCTT	176
<i>BAX</i>	NM_138764.4	AAGCTGAGCGAGTGTCTCAAGCGC	TCCCGCCACAAAGATGGTCACG	327
<i>BIRC5</i>	NM_001012271.1	TTCTCAAGGACCACCGCATC	CCAAGTCTGGCTCGTTCTCA	126
<i>BCL2</i>	NM_000633.2	GTGGAGGAGCTCTTCAGGGA	AGGCACCCAGGGTGATGCAA	306
<i>HIF1A</i>	NM_001243084.1	TTGATGGGATATGAGCCAGA	TGTCCTGTGGTGACTTGTCC	128
<i>CTB</i>	NM_001101.3	CCATCATGAAGTGTGACGTTG	ACAGAGTACTTGCGCTCAGGA	175

Table S2. Early breast cancer patients- Clinical information

Patient	age	Classification	grade	Estrogen receptor biopsy/tumor	Treatment	Days treatment	Treatment completed
1	42	Ductal	II	+/+	P	19	yes
2	40	Ductal	II	+/+	P	21	yes
3	43	Ductal	II	+/+	P	16	yes
4	44	Ductal	II	+/	I ₂	15	no
5	49	Ductal	II	+/+	I ₂	16	yes
6	49	Ductal	II	+/+	P	14	yes
7	49	Ductal	II	+/+	I ₂	16	yes
8	61	Ductal	II	+/+	I ₂	7	yes
9	38	Ductal	II	+/+	I ₂	23	yes
10	81	Ductal	II	+/+	I ₂	35	yes
11	45	Ductal	II	+/+	I ₂	21	yes
12	51	Ductal	II	+/+	P	12	yes
13	51	Ductal	II	+/+	P	21	yes
14	41	Ductal	II	+/+	P	21	yes
15	71	Ductal	II	+/+	P	41	yes
16	90	Ductal	II	+/+	P	12	yes
17	47	Medullar	II	+/+	P	17	yes
18	53	Ductal	II	+/+	I ₂	17	yes
19	44	Ductal	II	+/+	I ₂	27	yes
20	46	Medullar	II	+/+	I ₂	29	yes
21	47	Ductal	II	+/+	I ₂	10	yes
22	78	Ductal	II	+/+	I ₂	11	yes
23	78	Ductal	II	+/+	I ₂	15	yes
24	59	Lobular	II	+/+	P	13	yes
25	65	Lobular	II	+/	P	18	no
26	64	Lobular	II	+/	I ₂	9	no
27	59	Ductal	II	+/	P	10	no
28	61	Ductal	II	+/	P	15	no
29	62	Ductal	II	+/	I ₂	8	no
30	58	Ductal	II	+/	I ₂	7	no

Table S3. Late breast cancer patients-Clinical information

Patient	age	Classification	grade	Estrogen receptor biopsy/tumor	Therapy cycles	Treatment	Treatment completed
51	36	Ductal	IIIA	+/+	FEC 4	I ₂	yes
52	45	Ductal	IIIA	-/+	FEC 6	I ₂	yes
53	57	Ductal	IIIB	-/+	FEC 4	I ₂	yes
54	43	Ductal	IIIA	-/+	FEC 4	I ₂	yes
55	60	Ductal	IIIA	-/-	FEC 4	P	yes
56	38	Ductal	IIIA	-/-	FEC 4	P	yes
57	67	Ductal	IIIB	-/+	FEC 4	P	yes
58	49	Ductal	IIIA	+/+	TE 6	I ₂	yes
59	36	Ductal	IIIB	-/-	FEC 4	P	yes
60	41	Ductal	IIIB	+/+	TE 6	I ₂	yes
61	34	Ductal	IIIA	+/+	TE 6	P	yes
62	55	Lobular	IIIB	+/+	FEC 4	I ₂	yes
63	46	Lobular	IIIA	-/+	FEC 4	I ₂	yes
64	43	Lobular	IIA	+/+	FEC 4	P	yes
65	54	Ductal	IIIA	+/+	FEC 4	I ₂	yes
66	52	Ductal	IIIB	+/+	FEC 4	P	yes
67	40	Ductal	IIIA	+/+	FEC 4	I ₂	yes
68	42	Ductal	IIIA	-/-	FEC 4	P	yes
69	27	Lobular	IIIB	-/-	TE 6	I ₂	yes
70	61	Lobular	IIIB	+/	FEC 4	P	no
71	44	Ductal	IIIB	+/+	FEC 4	P	yes
72	43	Ductal	IIIB	+/+	FEC 4	P	yes
73	41	Ductal	IIIB	+/	FEC 4	P	no
74	36	Ductal	IIIB	+/	FEC 4	P	no
75	33	Ductal	IIIB	+/	FEC 4	P	no
76	29	Ductal	IIIB	+/	FEC 6	P	no
77	44	Ductal	IIIA	+/	FEC 4	P	no
78	49	Lobular	IIIA	+/+	FEC 4	P	yes
79	50	Ductal	IIIB	+/	FEC 4	P	no
80	56	Ductal	IIIB	+/	FEC 4	P	no

Table S4. Expression change of genes involved in Th1 and Th2 differentiation pathways in the different treatment groups.

T-Cell	Gene Symbol	<u>Control</u>		<u>I₂</u>		<u>FEC/TE</u>		<u>FEC/TE + I₂</u>	
		LogFC	FDR	LogFC	FDR	LogFC	FDR	LogFC	FDR
Th1	TBX21	-1.24	2.01E-06	2.31	7.01E-33	1.47	3.86E-08	2.70	3.19E-42
Th1	IL12RB1	-1.38	6.84E-11	2.18	4.61E-38	0.25	<i>ns</i>	3.11	7.37E-89
Th1	IL12RB2	-0.73	2.18E-02	3.67	2.05E-86	-0.62	<i>ns</i>	1.91	2.17E-16
Th1	IL27RA	-0.03	<i>ns</i>	1.48	5.42E-42	0.11	<i>ns</i>	1.20	4.22E-26
Th1	GP130	0.72	1.02E-03	0.56	1.56E-05	0.11	<i>ns</i>	1.33	1.51E-27
Th1	STAT1	-0.93	5.72E-11	1.73	6.47E-75	-0.24	<i>ns</i>	1.36	2.47E-46
Th1	STAT4	-1.19	1.69E-07	2.19	1.79E-36	1.56	1.29E-10	3.52	3.59E-104
Th1	JAK2	-0.62	9.50E-03	1.40	2.94E-28	0.03	<i>ns</i>	2.16	1.17E-67
Th1	IRF1	-0.96	1.26E-10	1.64	1.75E-60	0.51	4.10E-04	1.78	6.08E-69
Th1	IL18	-1.23	5.23E-11	1.74	2.24E-33	1.38	1.73E-15	2.04	5.89E-51
Th1	IL18RAP	-1.45	3.76E-06	2.96	6.04E-41	1.61	6.13E-05	3.26	1.44E-46
Th1	IFNGR1	0.42	7.06E-03	0.54	3.63E-07	-0.14	<i>ns</i>	0.45	1.52E-05
Th1	IFNGR2	-0.10	<i>ns</i>	-0.28	1.37E-02	0.62	2.16E-05	0.06	<i>ns</i>
Th1	TNFA	-1.69	3.33E-13	1.97	1.60E-24	1.01	2.22E-04	3.05	3.37E-62
Th1	TNFB	-2.28	2.48E-11	2.28	2.52E-13	1.86	1.78E-05	4.49	7.11E-77
Th2	GATA3	3.23	3.08E-97	-2.45	5.10E-133	-1.08	1.16E-12	-1.20	9.88E-34
Th2	TSLP	1.74	4.91E-06	-2.46	3.41E-10	-1.69	1.36E-04	-1.12	2.27E-04
Th2	DEC2	1.26	2.35E-14	-1.03	1.35E-19	-0.12	<i>ns</i>	-0.23	4.92E-02
Th2	IL13RA1	0.77	5.07E-06	0.05	6.83E-01	0.09	<i>ns</i>	-0.28	6.97E-03
Th2	AREG	0.67	<i>ns</i>	-2.74	2.79E-08	-0.36	<i>ns</i>	-1.25	9.40E-04
Th2	IL4R	0.44	7.86E-03	-0.08	5.26E-01	0.15	<i>ns</i>	0.94	2.40E-18
Th2	IL33	0.02	<i>ns</i>	-0.24	1.25E-01	0.42	1.51E-02	1.94	1.45E-68
Th2	STAT5A	-0.07	<i>ns</i>	0.38	3.11E-04	0.91	1.71E-10	0.33	1.94E-03
Th2	CCL22	-0.46	<i>ns</i>	0.60	9.48E-03	3.42	4.16E-49	2.40	3.18E-39
Th2	STAT6	-0.51	7.62E-04	0.21	4.76E-02	0.04	<i>ns</i>	0.71	1.76E-12
Th2	CCL11	-0.71	<i>ns</i>	0.81	1.80E-02	0.83	3.82E-02	2.10	9.32E-13
Th2	FOXP3	-1.45	4.76E-11	1.80	9.02E-25	-0.03	<i>ns</i>	2.61	5.05E-54

ns : not significant

Table S5. PPAR γ positively correlated genes in breast cancer- GO BP enrichment of differentially expressed genes in treatment groups

	Treatment	GO ID	GO Biological Process	FDR B&H	Genes from input	Total up/down regulated genes per treatment
Upregulated genes logFC>0.58;FDR<0.05	Control	GO:1901700	response to oxygen-containing compound	2.661E-3	15	49
		GO:0010243	response to organonitrogen compound	2.661E-3	11	
		GO:0042127	regulation of cell proliferation	7.174E-3	14	
	I ₂	GO:0006955	immune response	3.261E-4	14	36
		GO:0001819	positive regulation of cytokine production	4.397E-4	8	
		GO:0045087	innate immune response	5.771E-4	10	
	FEC/TE +I ₂	GO:1901700	response to oxygen-containing compound	5.149E-6	26	87
		GO:0009725	response to hormone	1.708E-5	20	
		GO:0006955	immune response	7.810E-5	23	
	FEC/TE	GO:1901700	response to oxygen-containing compound	8.777E-6	30	108
		GO:0009725	response to hormone	1.213E-5	23	
Downregulated genes logFC<0.58;FDR<0.05	Control	GO:0007155	cell adhesion	2.271E-5	96	96
		GO:0006955	immune response	1.003E-3	22	
		GO:0002684	positive regulation of immune system process	9.635E-4	17	
	I ₂	GO:0010243	response to organonitrogen compound	1.099E-5	22	109
		GO:1901700	response to oxygen-containing compound	7.586E-5	28	
		GO:0040011	locomotion	7.586E-5	29	
		GO:0007155	cell adhesion	1.750E-4	26	
	FEC/TE +I ₂	GO:0040011	locomotion	4.309E-2	15	58
		GO:0030198	extracellular matrix organization	4.309E-2	7	
	FEC/TE	ns	ns	ns	ns	37