

## **SUPPLEMENTARY MATERIALS**

### **Upregulation of MHC I Antigen Processing Machinery Gene Expression in Breast Cancer Cells by Trichostatin A**

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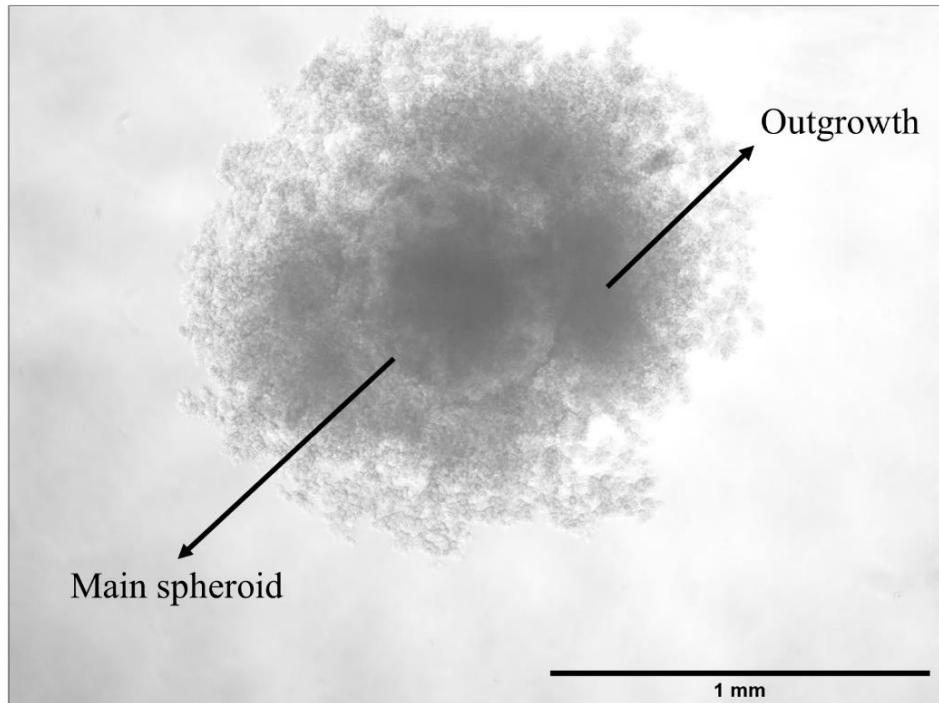
**Table S1.** Primer sequences for real-time PCR

<b>Gene</b>	<b>Accession Number</b>	<b>Forward Primer Sequence (5'-3')</b>	<b>Reverse Primer Sequence (5'-3')</b>
<i>PSMB9</i>	[1]	ATGCTGACTCGACAGC CTTT	GCAATAGCGTCTGTGG TGAA
<i>PSMB8</i>	NM_148919.3	TGCTGTCCAACATGAT GTGC	AGTCCCATGTTCATCCA CGTAG
<i>PSMB10</i>	NM_002801.4	GTGAAGCCACTAACCC TGGA	CTGGGTTTATTCCCCCT TGT
<i>TAP1</i>	NM_001292022.1	AGTCGAAGCTTGCC AACG	AGAGGATTCCCACTTT CAGCAG
<i>TAP2</i>	NM_001290043.1	TTTGACCCCCATGCCT TTG	TCCGCAAGTTGATTGCG AGAC
<i>B2M</i>	NM_004048.4	TCGCGCTACTCTCTCTT TCTG	ATTCTCTGCTGGATGAC GTGAG
MHC I	[1]	GCGGCTACTACAACCA GAGC	GATGTAATCCTTGCCGT CGT
<i>CD274</i>	[2]	GTGGCATCCAAGATAC AAACTCAA	TCCTTCCTCTTGTCACTG CTCA
nNav1.5	NM_001160160.2	TGATTATCATGGCGTAT GTATCAGA	TGAGGGCAAAGACGCT GAG
<i>MMP1</i>	[3]	ACGAATTGCCGACAG AGAT	GGAAGCCAAAGGAGCT GTAG
<i>FNI</i>	[4]	GACCTATCCAAGCTCA AGTGGT	ATCCAAGGTTCTGGG TGGG

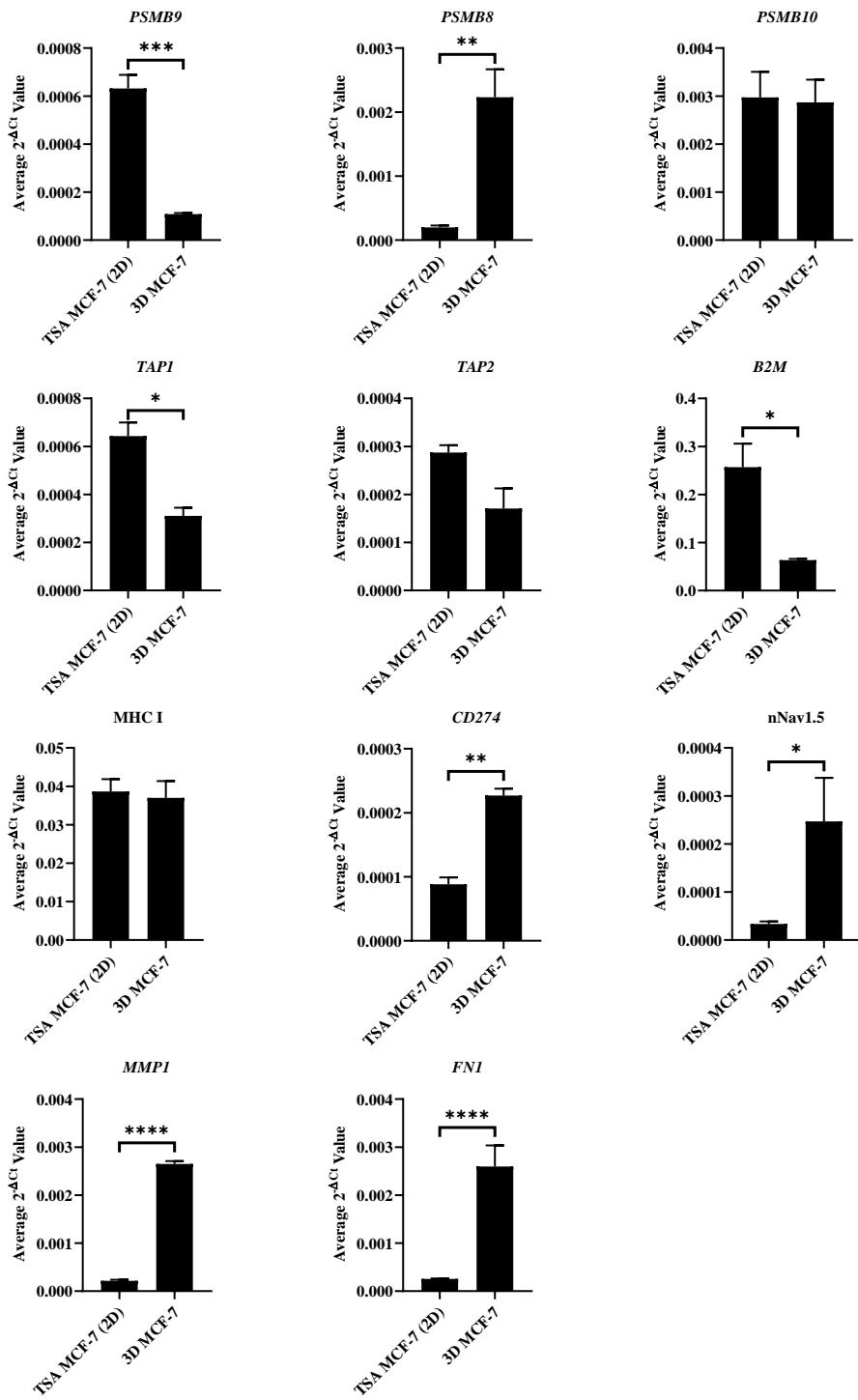
$\beta$ -actin	[5]	ATTGCCGACAGGATGC AGAAG	AGAACGCATTGCGGTG GACG
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**Table S2.** Effects of TSA treatment on MCF-7 spheroid culture against the monolayer culture

Gene	Average Fold Change of Treatment Effects
<i>PSMB9</i>	4.35
<i>PSMB8</i>	19.38
<i>PSMB10</i>	1.26
<i>TAP1</i>	13.33
<i>TAP2</i>	107.54
<i>B2M</i>	2.33
MHC I	7.68
<i>CD274</i>	21.9
nNav1.5	3.8
<i>MMP1</i>	18.25
<i>FNI</i>	-4.43



**Fig. S1.** The definition of main spheroid and outgrowth. The perimeter is utilized for volume analysis. Black error bars represent 1mm.



**Fig. S2.** mRNA expression comparison of MHC I APM, *CD274* and metastatic markers in 1000 ng/mL TSA-treated monolayer MCF-7 compared to the untreated MCF-7 spheroids. The untreated MCF-7 spheroids were developed via the liquid overlay method and grown for 15 days. Analysis was done using the  $2^{-\Delta Ct}$  method.

#### REFERENCES (TABLE S1)

1. Wang B., Niu D., Lai L., Ren E.C. 2013. p53 increases MHC class I expression by upregulating the endoplasmic reticulum aminopeptidase ERAP1. *Nat. Commun.* **4**, 2359-2359.
2. Vassilakopoulou M., Avgeris M., Velcheti V., et al. 2016. Evaluation of PD-L1 expression and associated tumor-infiltrating lymphocytes in laryngeal squamous cell carcinoma. *Clin. Cancer Res.* **22**, 704-713.
3. Xu M., Zhang F., Wang A., et al. 2016. Tumor necrosis factor-like weak inducer of apoptosis promotes hepatic stellate cells migration via canonical NF-κB/MMP9 pathway. *PLoS One.* **11**, e0167658.
4. Li S., Zhang J., Yang H., et al. 2015. Copper depletion inhibits CoCl<sub>2</sub>-induced aggressive phenotype of MCF-7 cells via downregulation of HIF-1 and inhibition of Snail/Twist-mediated epithelial-mesenchymal transition. *Sci. Rep.* **5**, 12410.
5. Kamarulzaman N.S., Dewadas H.D., Leow C.Y., Yaacob N.S., Mokhtar N.F. 2017. The role of REST and HDAC2 in epigenetic dysregulation of Nav1.5 and nNav1.5 expression in breast cancer. *Cancer Cell Int.* **17**, 74.