

**Supplementary Table S2:** Downregulated genes with a log fold change of >2 in TGF- $\beta$  treated HBVP

Symbol	Gene Name	Log fold change	Function	Connected to	Reference
RP11-554I8.2		3.71 ↓	Upregulated in bladder cancer		Cell Physiol Biochem 2018;50:1154
PPL	periplakin	3.26 ↓	Adhesion molecule. Links cytoskeletal elements to each other and to the plasma membran. Involved in cellular movement and attachment in cancer.	cell motility	BMC Cell Bio 2011, 12:41
PPARGC1A	peroxisome proliferator-activated receptor gamma, coactivator 1 alpha	3.26 ↓	Transcriptional coactivator of the genes involved in energy metabolism. Master regulator of mitochondrial biogenesis.. Pushes muscle fibers to be metabolically more oxidative and less glycolytic. Participates in the regulation of both carbohydrate and lipid metabolism.	metabolism	Physiol Rep 2006, 30 (4): 145
IL-1B	interleukin 1, beta	3.24 ↓	Important role in lipid metabolism Central role in coordinating host immune and proinflammatory responses	metabolism	J Exp Med 2003, 198 (6): 877 Brain Res Rev. 2009;60(1): 57
SPRY1	sprouty homolog 1, antagonist of FGF signaling	2.60 ↓	Membrane-anchored phosphoprotein inhibitors of growth factor signaling in endothelial cells. Molecular control of endothelial cell behaviour during blood vessel morphogenesis	angiogenesis	J Cell Bio 2001,152(5):1087 Nat Rev Mol Cell Biol. 2011;12(9):551
CTC-529P8.1		2.79 ↓	Suggested to be involved in angiogenic processes	angiogenesis	<a href="http://angiogenes.uni-frankfurt.de/">http://angiogenes.uni-frankfurt.de/</a>
RP11-215G15.5	lnc RNA	2.71 ↓	Unknown function		
TCF21	transcription factor 21	2.64 ↓	Involved in pathogenesis of fibrosis		Am J Pathol 2020, 190(1): 145
SDPR	Serum derivation response	2.61 ↓	Required for blood vessel formation (angiogenesis) Required for endothelial cell proliferation, migration and invasion	angiogenesis cell motility proliferation	J Biol Chem 2017,292 (43): 17760
ZBED3	zinc finger, BED-type containing 3	2.55 ↓	Axin-binding protein that is involved in Wnt/ $\beta$ -catenin signaling modulation		JBC 2009, 284, 11: 668
ST3GAL5	ST3 beta-galactosidase alpha-2,3-sialyltransferase	2.54 ↓	Downregulation associated with bladder cancer muscle invasion	cell motility	Oncol Let 2020, 20(1): 828
AFAP1L2	actin filament associated protein 1 like 2	2.50 ↓	Adaptor protein involved in many cellular functions, such as cell survival, cell proliferation, migration, and gene and miRNA expression	cell motility proliferation	Scientifica 2014;2014:903014.
IFIT1	interferon-induced protein with tetratricopeptide repeats 1	2.44 ↓	Involved in immune response and antiviral defense.	cell motility	Cancer Res. 2017, 77 (Suppl. 13):3933.

			overexpression of IFIT1 enhanced EGFR and AKT activation and subsequently promoted OSCC invasion through EMT		
THBD	thrombomodulin	2.36 ↓	transmembrane <u>glycoprotein</u> located on the luminal surface of <u>endothelial cells</u> in most normal blood vessels. Regulates coagulation and inflammation. Loss of TM is a prominent feature of postradiation endothelial dysfunction	angiogenesis (?)	Marjan Boerma, in Endothelial Signaling in Vascular Dysfunction and Disease, 2021
NOV	nephroblastoma overexpressed	2.34 ↓	Member of the CCN family of proteins. Expression reaugulted by TGF-β. Provides BMP antagonistic properties		Ann N Y Acad Sci 2007, 1116:50
CXADR	coxsackie virus and adenovirus receptor	2.31 ↓	Component of the epithelial apical junction complex. Function as a cell adhesion molecule. Essential for tight junction integrity.	angiogenesis (?)	PNAS 2001, 98(26): 15191
RP11-38P22.2	Lnc rNA	2.25 ↓	Suggested to be involved in angiogenic processes	angiogenesis	<a href="http://angiogenes.uni-frankfurt.de/">http://angiogenes.uni-frankfurt.de/</a>
GABRB1	gamma-aminobutyric acid (GABA) A receptor, beta 1	2.20 ↓	Inhibitory neurotransmitter for the central nervous system.		GABRB1 gamma-aminobutyric acid type A receptor subunit beta1 [Homo sapiens (human)] - Gene - NCBI (nih.gov)
STAR	Steroidogenic acute regulatory protein	2.06 ↓	promote the movement of cholesterol from the outer to the inner mitochondrial membrane	metabolism	PNAS 1996;93(24):13731
LINC00341	long intergenic non-protein coding RNA 341	2.05 ↓	Exerts anti-inflammatory effect on endothelial cells by repressing VCAM1		Physiol Genomics 2017, 49(7): 339
TNFRSF1B	tumor necrosis factor receptor superfamily, member 1B	2.05 ↓	Associated with diabetes type 2 kidney disease. critical for the promotion of tumor growth, invasion and metastasis.	cell motility	TNFRSF1B TNF receptor superfamily member 1B [Homo sapiens (human)] - Gene - NCBI (nih.gov) PlosOne 2014 <a href="https://doi.org/10.1371/journal.pone.0101138">doi.org/10.1371/journal.pone.0101138</a>
ARHGAP29	Rho GTPase activating protein 29	2.00 ↓	Prognostic factor of proliferation and invasion in prostate cancer.	cell motility proliferatoin	Oncol. Rep. 2020, 44 (6): 2735