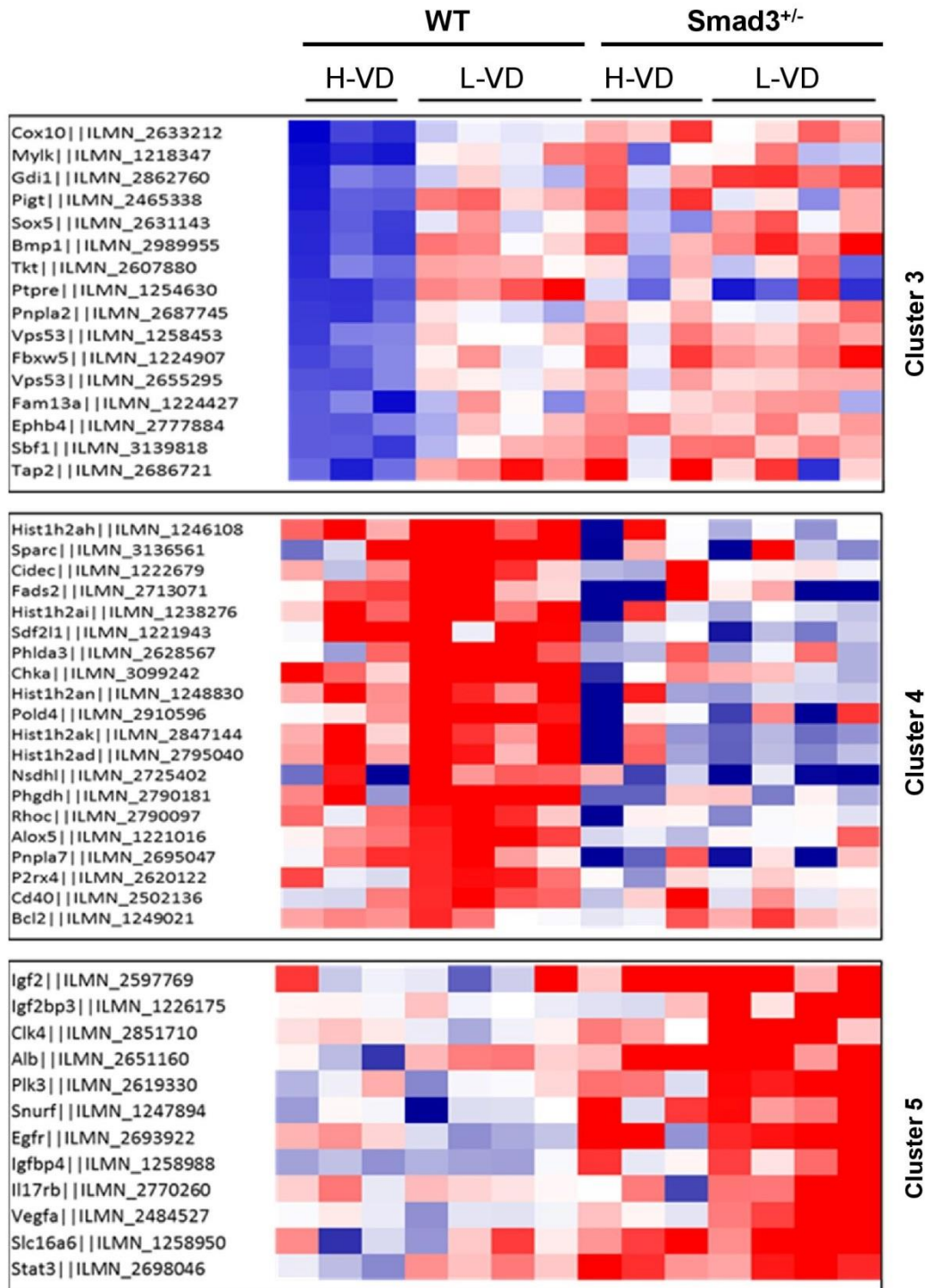


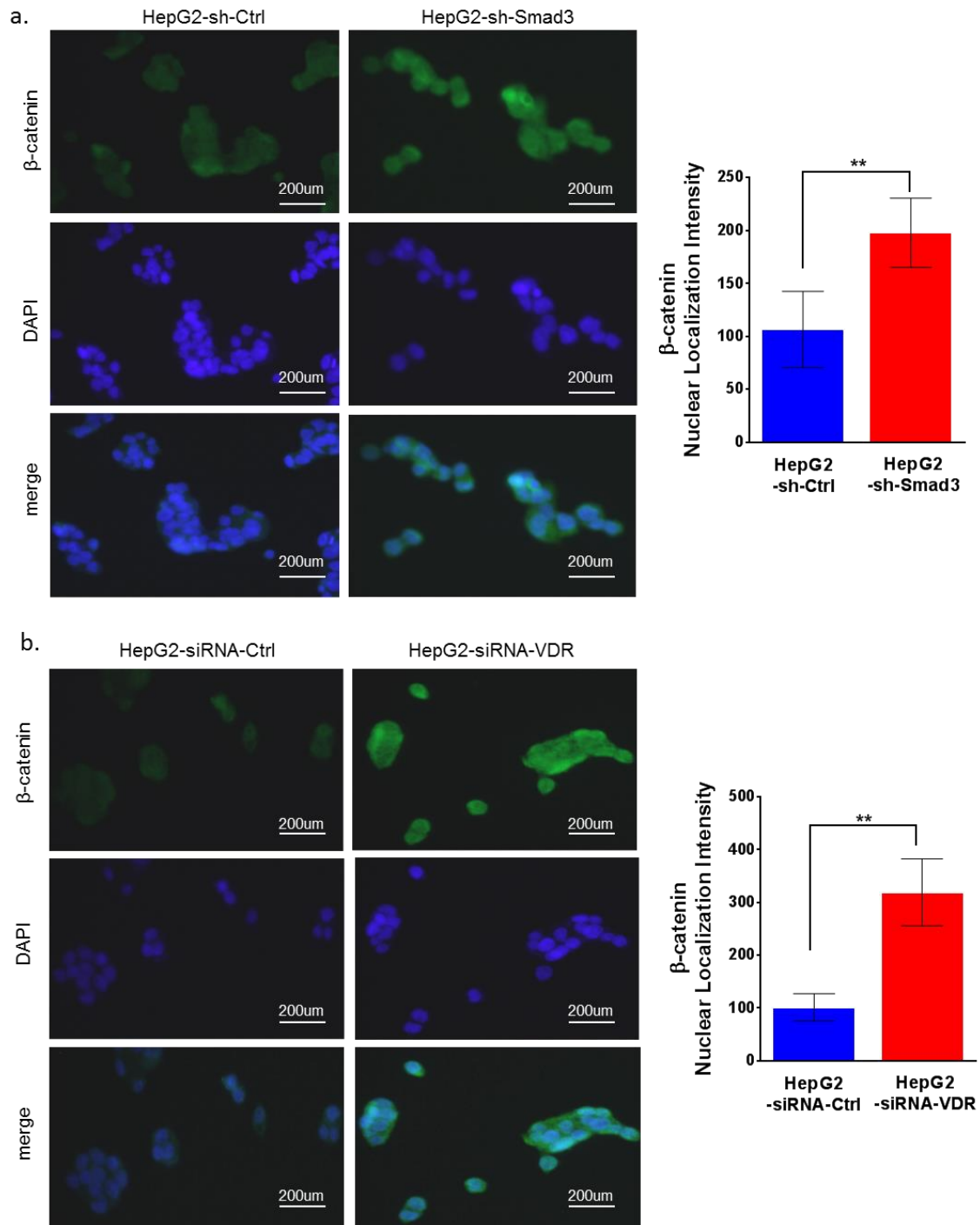
# **Vitamin D Deficiency Promotes Liver Tumor Growth in Transforming Growth Factor- $\beta$ /Smad3-Deficient Mice through Wnt and Toll-like Receptor 7 Pathway Modulation**

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**Supplementary Figure S1. Multiple genes are altered in *Smad3*<sup>+/-</sup> and low-VD fed mice.** Heatmap showing microarray results from liver tissue of wild-type or *Smad3*<sup>+/-</sup> mice fed with either a low-VD or a high-VD diet (cutoff: standard deviation < 0.4; final number of probes, 4,694). Represent genes were shown in Cluster 3, 4 and 5.



**Supplementary Figure S2. Loss of VDR/Smad3 increased levels of nuclear  $\beta$ -catenin.**  $\beta$ -catenin nuclear localization intensity was measured by immunofluorescence staining with phospho- $\beta$ -catenin antibodies and DAPI. HepG2 cells were transfected with lentiviral shRNA for Smad3 (a), or transfected with siRNA for VDR (b). The nuclear localization intensity of  $\beta$ -catenin was measured with MetaMorph image analysis software. Bar graph presents mean staining intensities. (\*\*  $P < 0.001$ , Student's t-test.)



**Supplementary Table S1. Tables of liver-to-body weight ratio, liver tumor number and lung tumor number.**

**Liver Tumor Number**

	<b>P value</b>	<b>Low VD</b>	<b>High VD</b>	<b>Difference</b>
Wild type	0.078	11.0	5.0	6.0
<i>Smad3</i> <sup>+/-</sup>	0.605	7.4	6.1	1.3

**Liver-to-Body Weight Ratio**

	<b>P value</b>	<b>Low VD</b>	<b>High VD</b>	<b>Low/High</b>
Wild type	0.721	8.721%	7.671%	1.137
<i>Smad3</i> <sup>+/-</sup>	0.028	18.366%	6.248%	2.940

**Lung Tumor Number**

	<b>P value</b>	<b>Low VD</b>	<b>High VD</b>	<b>Difference</b>
Wild type	0.341	4.6	3.625	0.975
<i>Smad3</i> <sup>+/-</sup>	0.324	4.5	6.188	-1.688