

# Supplementary Materials: mTOR Activation in Liver Tumors Is Associated with Metabolic Syndrome and Non-Alcoholic Steatohepatitis in Both Mouse Models and Humans

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**Table S1.** Incidences and multiplicities of total liver tumors, hepatocellular adenomas, and hepatocellular carcinomas in TSOD- and CDAHFD-fed C57BL/6J mice.

Age	52 weeks		60 weeks		38 weeks		48 weeks	
	TSNO	TSOD	TSNO	TSOD	Control	CDAHFD	Control	CDAHFD
Animals								
No. of animals <sup>a)</sup>	5	18	5	16	10	10	8	10
Liver tumors (HCC + HCA)								
Incidence (%)	1 (20)	11 (61)	0 (0)	13 (81) *	0	5 (50) *	0	8 (80) *
Multiplicity (No./mouse)	0.2 ± 0.4	1.0 ± 1.0	0.0 ± 0.0	1.8 ± 1.3 *	0.0 ± 0.0	1.2 ± 1.9	0.0 ± 0.0	2.2 ± 1.4 *
HCA								
Incidence (%)	0 (0)	8 (44)	0 (0)	8 (50)	0	5 (50) *	0	8 (80) *
Multiplicity (no./mouse)	0.0 ± 0.0	0.5 ± 0.6	0.0 ± 0.0	0.6 ± 0.6	0.0 ± 0.0	1.1 ± 1.7	0.0 ± 0.0	2.2 ± 1.4 *
HCC								
Incidence (%)	1 (20)	6 (33)	0 (0)	10 (63) *	0	1 (10)	0	0 (0)
Multiplicity (No./mouse)	0.2 ± 0.4	0.5 ± 0.9	0.0 ± 0.0	1.3 ± 1.3	0.0 ± 0.0	0.1 ± 0.3	0.0 ± 0.0	0.0 ± 0.0

HCC, hepatocellular carcinoma; HCA, hepatocellular adenoma; \*  $p < 0.05$ , as compared to the control. <sup>a</sup> Final number of survived animals subjected to the analysis.

**Table S2.** Clinicopathological characteristics of patients with hepatocellular carcinomas.

	<b>Metabolic Syndrome/NASH-Associated HCCs</b>	<b>Virus-Associated HCCs</b>
age (years)	51–82 (mean 71.8)	21–83 (mean 64.6)
sex		
male	37 (80%)	17 (55%)
female	9 (20%)	14 (45%)
complications		
obesity	24 (52%)	0
diabetes	32 (70%)	0
dyslipidemia	19 (41%)	0
hypertension	38 (83%)	0
hepatitis B virus infection	0	11 (35%)
hepatitis C virus infection	0	20 (65%)
differentiation of HCC		
well-differentiated	8 (17%)	6 (19%)
moderately differentiated	27 (59%)	19 (62%)
poorly differentiated	11 (24%)	6 (19%)
fibrosis of liver		
no fibrosis	1 (2%)	0
fibrous portal expansion	16 (36%)	9 (29%)
bridging fibrosis	15 (33%)	17 (55%)
cirrhosis	13 (29%)	5 (16%)
NASH histology		
confirmed by biopsy	2 (4%)	-
confirmed with surgical specimens	15 (33%)	-