

**SUPPLEMENTAL MATERIALS**

**Function of Inhibitor of Bruton’s Tyrosine Kinase Isoform  $\alpha$  (IBTK $\alpha$ ) in Nonalcoholic Steatohepatitis Links Autophagy and the Unfolded Protein Response**

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**SUPPLEMENTAL TABLES 2-4**

**Supplemental Table 2.** Clinical features and histological evaluation and scoring for NASH for patients that provide liver biopsy samples.

<b>Features</b>	<b>Control (n = 10)</b>	<b>Simple Steatosis (n = 10)</b>	<b>NASH (n = 10)</b>
Age (mean, std)	42 +/- 12	40 +/- 10	43 +/- 9
Gender (male/female)	1/9	2/8	2/8
BMI (kg/m <sup>2</sup> )	48 +/- 7	51 +/- 5	49 +/- 6
Weight (lbs)	305 +/- 62	317 +/- 34	308 +/- 56
AST (IU/L)	22 +/- 7	26 +/- 21	33 +/- 16
ALT (IU/L)	20 +/- 12	26 +/- 9	35 +/- 20*
Glucose (mg/dL)	110 +/- 26	115 +/- 45	143 +/- 38
Insulin	22 +/- 10	24 +/- 8	59 +/- 57
Triglycerides (mg/dL)	126 +/- 46	128 +/- 35	342 +/- 312*
<b>Steatosis</b>			
Grade 0	10 (100%)		
Grade 1		6 (60%)	4 (40%)
Grade 2		3 (30%)	6 (50%)
Grade 3		1 (10%)	
<b>Fibrosis</b>			
Absent	10 (100%)	10 (100%)	5 (50%)
Present			5 (50%)
<b>Ballooning and Lobular Inflammation</b>			
Absent	10 (100%)	10 (100%)	2 (20%)
Present			8 (80%)

\* indicates P<0.05 compared to control and simple steatosis.

**Supplemental Table 3.** Cytokine panel on serum from patients providing liver biopsy samples.

<b>Cytokine</b>	<b>Control (n = 9)</b>	<b>Simple Steatosis (n = 10)</b>	<b>NASH (n = 10)</b>
IL-8	281 +/- 126	276 +/- 188	1039 +/- 840*
TNF $\alpha$	10.45 +/- 6	35 +/- 27*	24 +/- 20*
IL-6	47 +/- 26	82 +/- 49*	73 +/- 32*
IL-2	29 +/- 18	62 +/- 71	51 +/- 72
IL-4	27 +/- 14	44 +/- 45	18 +/- 5
IL-5	16 +/- 9	20 +/- 19	15 +/- 7
IL-1b	67 +/- 43	120 +/- 81	84 +/- 53
IL-10	35 +/- 20	49 +/- 44	44 +/- 22
GM-CSF	16 +/- 15	100 +/- 223	15 +/- 10
INF- $\gamma$	48 +/- 19	55 +/- 29	45 +/- 27
HMGB1	2 +/- 1.5	2 +/- 1.3	3 +/- 2

\* indicates P<0.05 compared to control and simple steatosis.

**Supplemental Table 4.** Primers for quantitative PCR.

<b>GENE_ID</b>	<b>Species</b>	<b>Primer</b>	<b>Sequence</b>
<i>GAPDH</i>	Homo sapien	Forward	5'-AGGGCTGCTTTTAACTCTGGT-3'
		Reverse	5'-CCCCACTTGATTTTGGAGGGA-3'
<i>ATF4</i>	Homo sapien	Forward	5'-TCAAACCTCATGGGTCTCC-3'
		Reverse	5'-GTGTCATCCAACGTGGTCAG-3'
<i>CHOP/DDIT3</i>	Homo sapien	Forward	5'-AGGAACCAGGAAACGAAACAGA-3'
		Reverse	5'-TCTCCTTCATGCGCTGCTT-3'
<i>CXCL8</i>	Homo sapien	Forward	5'-CTGCGCCAACACAGAAATTA-3'
		Reverse	5'-ATTGCATCTGGCAACCCTAC-3'
<i>TNFA</i>	Homo sapien	Forward	5'-CTCTCTCCCCTGGAAAGGAC-3'
		Reverse	5'-GCCAGAGGGCTGATTAGAGA-3'
<i>IBTK<math>\alpha</math></i>	Homo sapien	Forward	5'-CCGCCTTCCAGTTGTAATG-3'
		Reverse	5'-AGCAAACAACCCAGTTGTCC-3'
<i>SQSM1</i>	Homo sapien	Forward	5'-CACCTGTCTGAGGGCTTCTC-3'
		Reverse	5'-CACACTCTCCCCAACGTTCT-3'
<i>MAP1LC3B</i>	Homo sapien	Forward	5'-ATTCGAGAGCAGCATCCAAC-3'
		Reverse	5'-CTGTGTCCGTTACCAACAG-3'