

## Journal of Hepatology

### CTAT methods

Tables for a “Complete, Transparent, Accurate and Timely account” (CTAT) are now mandatory for all revised submissions. The aim is to enhance the reproducibility of methods.

- Only include the parts relevant to your study
- Refer to the CTAT in the main text as ‘Supplementary CTAT Table’
- Do not add subheadings
- Add as many rows as needed to include all information
- Only include one item per row

**If the CTAT form is not relevant to your study, please outline the reasons why:**

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#### 1.1 Antibodies

Name	Citation	Supplier	Cat no.	Clone no.
Mouse monoclonal anti $\beta$ -actin	Uribarri AD <i>et al.</i> Gut 2015.	Sigma	A5316	AC-74
Rabbit monoclonal anti-SUMO1	Yang, D <i>et al.</i> Blood 2003.	Abcam	ab32058	Y299
Rabbit monoclonal anti-SUMO1 (BSA and Azide free)	Not available	Abcam	ab219724	Y299
Rabbit monoclonal anti-UBC9	He, X <i>et al.</i> Nat Chem Biol 2017.	Abcam	ab75854	EP2938Y
Rabbit monoclonal anti-Ubiquitin	Zhang K <i>et al.</i> Nat Commun 2018.	Abcam	ab134953	EPR8830
Mouse monoclonal anti-p62		Abcam	ab56416	X
Mouse monoclonal anti-acetylated $\alpha$ -tubulin	Caballero-Camino FJ <i>et al.</i> Hepatology 2020.	Sigma-Aldrich	T6793	6-11 B-1
Rabbit monoclonal anti- $\alpha$ -tubulin	Caballero-Camino FJ <i>et al.</i> Hepatology 2020.	Abcam	ab52866	EP1332Y
Rabbit monoclonal IgG	Liu S <i>et al.</i> Tumour Biol 2014	Abcam	ab172730	EPR25A
Anti-mouse IgG, HRP-linked Antibody	Uribarri AD <i>et al.</i> Gut 2015.	Cell Signaling	#7076	X
Anti-rabbit IgG, HRP-linked Antibody	Yang, D <i>et al.</i> Blood 2003.	Cell Signaling	#7074	X

#### 1.2 Cell lines

Name	Citation	Supplier	Cat no.	Passage no.	Authentication test method
Normal Human Cholangiocytes (NHC)	Uribarri AD <i>et al.</i> Gut 2015. Banales JM <i>et al.</i> Hepatology 2012.	X	X	P4-P10	Biliary markers expression (CK-7, CK-19, AQP, AE2, CFTR)
GANAB mutated human cholangiocytes (ADPKD)	Uribarri AD <i>et al.</i> Gut 2015. Banales JM <i>et al.</i> Hepatology 2012.	X	X	P4-P10	Biliary markers expression (CK-7, CK-19, AQP, AE2, CFTR)

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Normal rat cholangiocytes (NRC)	Vroman B <i>et al.</i> Laboratory Investigation 1996.	X	X	P19-P25	Biliary markers expression (CK-7, CK-19, AQP, AE2, CFTR)
<i>Pkhd1</i> mutated rat cholangiocytes (PCK)	Vroman B <i>et al.</i> Laboratory Investigation 1996.	X	X	P19-P25	Biliary markers expression (CK-7, CK-19, AQP, AE2, CFTR)

## 1.3 Organisms

Name	Citation	Supplier	Strain	Sex	Age	Overall n number
Sprague Dawley (SD)	Mason SB <i>et al.</i> The Anatomical Record 2011 Masyuk TV <i>et al.</i> The American Journal of pathology 2004.	Charles River Laboratories Inc.	Crl:CD(SD)	Male	8 weeks	4
Sprague Dawley (SD)	Mason SB <i>et al.</i> The Anatomical Record 2011 Masyuk TV <i>et al.</i> The American Journal of pathology 2004.	Charles River Laboratories Inc.	Crl:CD(SD)	Female	8 weeks	4
PCK	Mason SB <i>et al.</i> The Anatomical Record 2011 Masyuk TV <i>et al.</i> The American Journal of pathology 2004.	Charles River Laboratories Inc.	PCK/CrljCrl- <i>Pkhd1<sup>pck</sup></i> /Crl	Male	8 weeks	13
PCK	Mason SB <i>et al.</i> The Anatomical Record 2011 Masyuk TV <i>et al.</i> The American Journal of pathology 2004.	Charles River Laboratories Inc.	PCK/CrljCrl- <i>Pkhd1<sup>pck</sup></i> /Crl	Female	8 weeks	13

## 1.4 Sequence based reagents

Name	Sequence	Supplier
<i>ATF6</i>	Forward: 5'-GCTGGATGAAGTTGTGTCAGAG-3' Reverse: 5'-TGTTCCAACATGCTCATAGGTC-3'	Sigma-Aldrich
<i>ATG5</i>	Forward: 5'-CGTCCTGTGGCTGCAGATG-3' Reverse: 5'-AAGGACAAACTTCTTTGAGGAGA-3'	Sigma-Aldrich
<i>BAX</i>	Forward: 5'-CCCAGAGGTCCTTTTCCGA-3' Reverse: 5'-CCAGCCCATGATGGTTCTGAT-3'	Sigma-Aldrich
<i>BECN1</i>	Forward: 5'-GATGGAAGGGTCTAAGACGTCCAA-3' Reverse: 5'-TTTCGCCTGGGCTGTGGTAAG-3'	Sigma-Aldrich
<i>BIM</i>	Forward: 5'-GCCCCTACCTCCCTACAGAC-3'	Sigma-Aldrich

	Reverse: 5'-CCTTATGGAAGCCATTGCAC-3'	
<i>CHOP</i>	Forward: 5'-TCTTCATACATCACCACACC-3' Reverse: 5'-CTTGTGACCTCTGCTGGTTC-3'	Sigma-Aldrich
<i>DR5</i>	Forward: 5'-ACAGTTGCAGCCGTAGTCTTG-3' Reverse: 5'-CCAGGTCGTTGTGAGCTTCT-3'	Sigma-Aldrich
<i>GAPDH</i>	Forward: 5'-CCAAGTCCATCCATGACAAC-3' Reverse: 5'-TGTCATACCAGGAAATGAGC-3'	Sigma-Aldrich
<i>GRP78</i>	Forward: 5'-GAGCTGTGCAGAACTCCGGCG-3' Reverse: 5'-ACCACCTGCTGAATCTTTGGAATTCGAGT-3'	Sigma-Aldrich
<i>IRE1α</i>	Forward: 5'-AGGGACGAGGGAATCGTA-3' Reverse: 5'-CAGTCCCTAATGCCACACCT-3'	Sigma-Aldrich
<i>LC3B</i>	Forward: 5'-GGTGAGAAGCAGCTTCCTGT-3' Reverse: 5'-TCTCCTGGGAGGCATAGACC-3'	Sigma-Aldrich
<i>MAT1A</i>	Forward: 5'-GTTACATCGGAGTCTGTGG-3' Reverse: 5'-GATGTGCTTGATGGTGTCC-3'	Sigma-Aldrich
<i>MAT2A</i>	Forward: 5'-GCTACGAGTAGAACGCTGTC-3' Reverse: 5'-GCATCAGGATCCTGCTGAAG-3'	Sigma-Aldrich
<i>MAT2B</i>	Forward: 5'-CAGATGCTGCCTCTCAAC-3' Reverse: 5'-GAACCTCTGCTGCCAGTG-3'	Sigma-Aldrich
<i>SQSTM1/P62</i>	Forward: 5'-TACGACTTGTGTAGCGTCTG-3' Reverse: 5'-CGTGTTCACCTTCCGGAG-3'	Sigma-Aldrich
<i>PERK</i>	Forward: 5'-CAGGCAAAGGAAGGAGTCTG-3' Reverse: 5'-AACAACTCAAAGCCACCAC-3'	Sigma-Aldrich
<i>SAE1</i>	Forward: 5'-CTTGCTGCTCCAGGGATGTC-3' Reverse: 5'-GACCATCGTTGTCTCAGAAG-3'	Sigma-Aldrich
<i>SOX9</i>	Forward: 5'-GTACCCGCACTTGACAAC-3' Reverse: 5'-TCGCTCTCGTTCAGAAGTCTC-3'	Sigma-Aldrich
<i>SOX17</i>	Forward: 5'-GTGGACCCGACGGAATTTG-3' Reverse: 5'-GGAGATTCACACCGGAGTCA-3'	Sigma-Aldrich
<i>SUMO1</i>	Forward: 5'-CCGTCATCATGTCTGACC-3' Reverse: 5'-GGAACACCCTGTCTTTGAC-3'	Sigma-Aldrich
<i>UBA2</i>	Forward: 5'-CGTTGCCTACCATGACAGC-3' Reverse: 5'-GAGGAACATCAGCTGCCAG-3'	Sigma-Aldrich
<i>Ubiquitin</i>	Forward: 5'-CCTGAGGGGTGGCTGTTA-3' Reverse: 5'-GCTACCATGCAACGAAACC-3'	Sigma-Aldrich
<i>UBE2I</i>	Forward: 5'-GGACTTTGAACATGTCGG-3' Reverse: 5'-CCGAAGGGTACACATTCGG-3'	Sigma-Aldrich
<i>s-XBP1</i>	Forward: 5'-GCTGAGTCCGCAGCAGGT-3' Reverse: 5'-CTGGGTCCAAGTTGTCCAGAAT-3'	Sigma-Aldrich
<i>ZO-1</i>	Forward: 5'-CGGTCCTCTGAGCCTGTAAG-3' Reverse: 5'-GGATCTACATGCGACGACAA-3'	Sigma-Aldrich
<i>α-Sma</i>	Forward: 5'-CGCCATCAGGAACCTCGAGAAG-3' Reverse: 5'-ATCATCACCAGCAAAGCCCG-3'	Sigma-Aldrich
<i>Col1a1</i>	Forward: 5'-GACTGTCCCAACCCCAA-3' Reverse: 5'-CTTGGGTCCCTCGACTCCTA-3'	Sigma-Aldrich
<i>Ctgf</i>	Forward: 5'-CTAGCTGCCTACCGACTGGA-3' Reverse: 5'-GCCCATCCCACAGGTCTTAG-3'	Sigma-Aldrich
<i>Cxcl1 (IL8 homolog)</i>	Forward: 5'-ACTCAAGAATGGTCGCGAGG-3' Reverse: 5'-ACGCCATCGGTGCAATCTAT-3'	Sigma-Aldrich
<i>Gapdh</i>	Forward: 5'-TGTGAACGGATTTGGCCGA-3' Reverse: 5'-ATGAAGGGGTGCTTGTATGGC-3'	Sigma-Aldrich
<i>Il6</i>	Forward: 5'-CATTCTGTCTCGAGCCCACC-3' Reverse: 5'-GTCCCAAGGAAGGCAACTGG-3'	Sigma-Aldrich
<i>Mat1a</i>	Forward: 5'-CGAGAAGTGTGACACCATG-3' Reverse: 5'-CATCCAGCACTGCATCAC-3'	Sigma-Aldrich
<i>Mat2a</i>	Forward: 5'-CACTTCAGAGTCTGTAGG-3' Reverse: 5'-CCTGCACCAATGTCTTCCTC-3'	Sigma-Aldrich
<i>Mat2b</i>	Forward: 5'-GAGAAGGAGCTCTCCATCC-3' Reverse: 5'-CAGCAGGTTCACTGTTCCG-3'	Sigma-Aldrich
<i>Sae1</i>	Forward: 5'-GTCGACCAGATCTGTACAG-3' Reverse: 5'-CACTCCAGTCCACTGCTAG-3'	Sigma-Aldrich
<i>Sumo1</i>	Forward: 5'-GACAGCAGTGAGATCCAT-3' Reverse: 5'-CTAAGAGATGGAGTGCCAG-3'	Sigma-Aldrich
<i>Tgfβ1</i>	Forward: 5'-CTGCTGACCCCCACTGATAC-3' Reverse: 5'-GGAGATTCACACCGGAGTCA-3'	Sigma-Aldrich

<i>Uba2</i>	Forward: 5'-CCATGACAGCATCATGAACC-3' Reverse: 5'-CTCTGTCAGGAGACACTTC-3'	Sigma-Aldrich
<i>Ube2i</i>	Forward: 5'-CGTGTATCCTTCTGGCAC-3' Reverse: 5'-CTTCGCTTGTGCTCGAAC-3'	Sigma-Aldrich

## 1.5 Biological samples

Description	Source	Identifier
Cystic wall biopsies from patients with ADPLD ( <i>PRKCSH</i> and <i>SEC63</i> mutated)	Radboud University Medical Center (Nijmegen, The Netherlands)	2012/317
Healthy human gallbladder biopsies obtained from metastatic colon cancer patients	Donostia University Hospital (San Sebastian, Spain)	MSA-MMR-2017-01
Healthy human liver biopsies obtained from metastatic colon cancer patients	Donostia University Hospital (San Sebastian, Spain)	MSA-MMR-2017-01

## 1.6 Deposited data

Name of repository	Identifier	Link
DAVID	DAVID 6.8	<a href="https://david.ncifcrf.gov/summary.jsp">https://david.ncifcrf.gov/summary.jsp</a>
Heatmapper	Heatmapper	<a href="http://heatmapper.ca/">http://heatmapper.ca/</a>
STRING	STRING 11.0	<a href="https://string-db.org/">https://string-db.org/</a>

## 1.7 Software

Software name	Manufacturer	Version
Bio-Rad CFX Maestro™ 1.0	Bio-Rad	4.0.2325.0418
Microsoft Excel for Mac	Microsoft Corporation	16.32
Guava @ InCyte™	Merck Millipore	3.1.1
i-control™	Tecan	1.8
NIS-Element AR	Nikon	3.2
Image J	National Institutes of Health-Bethesda	1.50
GraphPad Prism	GraphPad Software, Inc.	8.3.0
PEAKS Studio	Bioinformatics Solutions Inc	8.5
Proteome Discoverer	Thermo Fisher	1.4
DataAnalysis	Bruker	
ZEN	Zeiss	3.2 (blue edition)

## 1.8 Other (e.g. drugs, proteins, vectors etc.)

S-adenosyl-L-methionine disulfate p-toluenesulfonate (SAME)	Gnosis S.p.A.	
MG132	Sigma Aldrich	
UBE2I shRNA	Sigma Aldrich	TRCN0000329448
Scramble shRNA	Sigma Aldrich	

## 1.9 Please provide the details of the corresponding methods author for the manuscript:

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**2.0 Please confirm for randomised controlled trials all versions of the clinical protocol are included in the submission. These will be published online as supplementary information.**