**Supplementary Tables**

Evaluation of Gremlin-1 as a therapeutic target in metabolic dysfunction-associated steatohepatitis

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# Supplementary Tables

Supplementary File 1a: Rat CDAA-HFD study: clinical chemistry and histological results for all antibody concentrations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | chow | Iso-Ab | 2021 | 0361 |
|   | 25 | 2.5 | 1 | 0.25 | 25 | 2.5 | 1 |
| body weight (g) | 639±20 | 459±45 | 443±36 | 438±36 | 442±28 | 447±42 | 473±33 | 453±41 | 446±47 |
| ALT (U/mL) | 72±12 | 197±88 | 170±69 | 247±209 | 155±47 | 194±66 | 149±28 | 170±34 | 191±71 |
| AST (U/mL) | 283±195 | 572±108 | 534±141 | 551±101 | 522±82 | 607±103 | 558±89 | 518±157 | 587±114 |
| relative liver weight (%) | 2.77±0.11 | 5.7±0.79 | 5.72±0.97 | 5.79±1.12 | 6.03±0.86 | 5.45±0.82 | 5.24±0.84 | 5.58±1.01 | 5.48±0.82 |
| steatosis (% area) | 0.85±0.23 | 19.7±2.53 | 17.77±3.41 | 18.46±3.36 | 18.36±3.46 | 16.76±3.01 | 17.78±2.35 | 19.25±2.66 | 18.12±3.54 |
| PSR (% area) | 1.12±0.31 | 5.26±1.61 | 7.11±2.54 | 5.58±2.82 | 6±2.83 | 5.78±2.62 | 4.71±1.03 | 5.54±2.36 | 6±2.59 |
| CD45 (% area) | 1.26±0.67 | 4.89±2.07 | 4.7±1.01 | 4.03±1.14 | 5.87±2.68 | 7.18±2.8 | 4.17±1.35 | 5.81±3.76 | 4.74±2.07 |
| Collagen 1 (% area) | 2.59±1.47 | 10.9±2.6 | 13.62±3.14 | 13.15±6.51 | 13.37±4.44 | 14.35±6.42 | 10.49±2.68 | 11.32±4.14 | 12.62±4.46 |
| aSMA (% area) | 0.83±0.16 | 13.15±3.16 | 13.75±2.41 | 11.82±2.42 | 14±2.67 | 13.56±3.14 | 12.25±2.68 | 12.84±2.05 | 13.43±2.88 |
| CD68 (% area) | 3.79±0.5 | 14.45±2.37 | 15.16±2.11 | 14.81±3.35 | 14.69±2.72 | 15.73±3.27 | 13.34±2.4 | 14.14±2.91 | 14.49±2.51 |
| CD11b (% area) | 0.07±0.04 | 0.68±0.53 | 0.84±0.71 | 0.54±0.42 | 0.91±0.57 | 0.96±0.89 | 0.67±0.5 | 0.9±0.89 | 0.75±0.59 |

All data are given as mean ± SD

Supplementary File 1b: Rat CDAA-HFD study: qPCR results for all antibody concentrations

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | chow |  | Iso-Ab | 2021 | 0361 |
|   |  | 25 | 2.5 | 1 | 0.25 | 25 | 2.5 | 1 |
| Col1a1 | 0±1.13 |  | 6.97±0.78 | 6.95±0.71 | 6.82±0.63 | 7.12±0.95 | 7.39±0.57 | 7.09±0.69 | 7.03±0.73 | 6.97±0.78 |
| Col3a1 | 0±0.72 |  | 3.63±0.68 | 3.4±0.48 | 3.58±0.54 | 3.81±0.58 | 3.97±0.39 | 3.77±0.37 | 3.75±0.52 | 3.79±0.8 |
| Grem1 | 0±0.51 |  | 3.33±0.55 | 3.37±0.37 | 3.28±0.36 | 3.66±0.64 | 3.75±0.46 | 3.49±0.39 | 3.47±0.35 | 3.42±0.35 |
| Mki67 | 0±0.52 |  | 4.53±0.54 | 4.59±0.46 | 4.54±0.69 | 4.83±0.71 | 4.59±0.57 | 4.79±0.54 | 4.55±0.6 | 4.27±0.61 |
| Tgfb1 | 0±1.14 |  | 4.12±1.32 | 4.44±0.62 | 4.24±0.83 | 4.02±2.17 | 4.57±0.53 | 4.08±1.11 | 4.35±0.65 | 4.5±0.64 |
| Timp1 | 0±0.25 |  | 4.35±0.36 | 4.5±0.36 | 4.36±0.51 | 4.5±0.61 | 4.47±0.29 | 4.3±0.4 | 4.26±0.35 | 4.35±0.4 |
| Tnf | 0±1.22 |  | 2.96±1.13 | 3.52±1.09 | 3.1±0.78 | 3.55±0.99 | 3.82±1.11 | 3.54±0.77 | 3.46±0.95 | 3.61±0.91 |

All data are given as mean ± SD

Supplementary File 1c: Table of Taqman Assay IDs

|  |  |  |
| --- | --- | --- |
| Species | Target | Assay ID |
| Human | ACTA2 | Hs01879841\_s1 |
| AFTPH | Hs00214281\_m1 |
| BMP2 | Hs00154192\_m1 |
| BMP4 | Hs00370078\_m1 |
| BMP7 | Hs00233476\_m1 |
| BMPR1A | Hs04980288\_g1  |
| BMPR1B | Hs01010965\_m1  |
| BMPR2 | Hs00176148\_m1  |
| COL1A1 | Hs00164004\_m1 |
| CTCF | Hs00902016\_m1 |
| ERCC3 | Hs01554457\_m1 |
| GREM1 | Hs01879841\_s1 |
| HPRT1 | Hs02800695\_m1 |
| ID1 | Hs00357821\_g1 |
| ID2 | Hs00747379\_m1 |
| INHBA | Hs01081598\_m1 |
| INHBB | Hs00173582\_m1 |
| SMAD1 | Hs00195432\_m1  |
| SMAD2 | Hs00998187\_m1  |
| SMAD3 | Hs00969210\_m1 |
| SMAD4 | Hs00929647\_m1 |
| SMAD5 | Hs00195437\_m1 |
| SMAD6 | Hs00178579\_m1 |
| SMAD7 | Hs00998193\_m1 |
| SMAD9 | Hs00931723\_m1  |
| SRSF4 | Hs00194538\_m1 |
| TIMP1 | Hs01092512\_g1 |
| Rat | B2m | Rn00560865\_m1 |
| Actb | Rn00667869\_m1 |
| Gapdh | Rn01775763\_g1 |
| Col3a1 | Rn01437681\_m1 |
| Col1a1 | Rn01463848\_m1 |
| Tgfb1 | Rn00572010\_m1 |
| Mki67 | Rn01451446\_m1 |
| Timp1 | Rn01430873\_g1 |
| TNF | Rn99999017\_m1 |
| Grem1 | Rn01509832\_m1 |

All Taqman assays were purchased from ThermoFisher Scientific

Supplementary File 1d: Custom-made primer sequences

|  |  |  |
| --- | --- | --- |
| **Target** | **Primer** | **Sequence** |
| GAPDH | GAPDH\_116bp\_fw | 5' - CTC TGC TCC TCC TGT TCG AC - 3' |
| GAPDH\_116bp\_rv | 5' - CAA TAC GAC CAA ATC CGT TGA C - 3' |
| GFP | GFP\_109bp\_fw | 5' - GCT ACC CCG ACC ACA TGA AG - 3' |
| GFP\_109bp\_rv | 5' - CGG GTC TTG TAG TTG CCG T - 3' |
| GREM1 | GREM1\_109bp\_fw | 5' - GAG CCC TGC TTC TCC TCT TG - 3' |
| GREM1\_109bp\_rv | 5' - TCT GAG TCA TTG TGC TGG GC - 3' |