
Supplementary information

HDL-scavenger receptor B type 1 facilitates SARS-CoV-2 entry

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Statistics and Reproducibility

Figure 1

- b) $n = 3$ independent biological experiments. This experiment was performed 3 times with similar results. Data for this analysis can be found in Source Data.
- c) $n = 3$ independent experimental repeats. This experiment was performed 2 times with similar results. Data for this analysis can be found in Source Data.
- d) $n = 3$ independent biological experiments. This experiment was performed 2 times with similar results. Data for this analysis can be found in Source Data.
- e) This experiment was performed 3 times with similar results.
- f) $n = 3$ independent biological experiments. The data are the mean $\pm$ SEM. Data for this analysis can be found in Source Data. This experiment was performed 3 times with similar results.

Figure 2

- a) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for 0.1% FBS vs HDL 1 $\mu\text{g/mL}$ by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0.1% FBS vs HDL 3 $\mu\text{g/mL}$ by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0.1% FBS vs HDL 6 $\mu\text{g/mL}$ by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0.1% FBS vs HDL 12 $\mu\text{g/mL}$ by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 3 times with similar results.
- b) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0013$ for 0.1% FBS vs HDL by two-tailed Student's t -tests. This experiment was performed 2 times with similar results.
- c) $n = 3$ independent biological experiments. $P < 0.0001$ for 0.1% FBS vs HDL 6 $\mu\text{g/mL}$ by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0.1% FBS vs HDL 12 $\mu\text{g/mL}$ by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.
- d) This experiment was performed 2 times with similar results.

- e) n=50 from 3 biologically independent samples and five technical duplication for each sample. Data for this analysis can be found in Source Data. $P < 0.0001$ for 0.1% FBS vs HDL by two-tailed Student's t-tests. This experiment was performed 2 times with similar results.
- f) The results shown are representative of 3 times independent biological experiments.
- g) n = 3 independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0001$ for 0.1% FBS vs HDL 0.5 $\mu\text{g/mL}$ by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0.1% FBS vs HDL 5 $\mu\text{g/mL}$ by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.
- h) n = 3 independent biological experiments. This experiment was performed 2 times with similar results. Data for this analysis can be found in Source Data.
- i) n = 3 independent biological experiments. This experiment was performed 2 times with similar results. Data for this analysis can be found in Source Data.
- j) n = 3 independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for 0.1% FBS IgG vs 0.1% FBS 1D2 by two-tailed Student's t-tests, $P < 0.0001$ for HDL IgG vs HDL 1D2 by two-tailed Student's t-tests. This experiment was performed 2 times with similar results.

Figure 3

- a) n = 3 independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for SARS-2-Spp HA-V vs SARS-2-Spp HA-SR-B1 by two-tailed Student's t-tests. This experiment was performed 3 times with similar results.
- b) n = 3 independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for HDL siCtrl vs HDL siSR-B1 by two-tailed Student's t-tests. This experiment was performed 3 times with similar results.
- c) $P=0.004$, $r=-0.94$ was determined by two-tailed Spearman's non-parametric test. Data for this analysis can be found in Source Data. This experiment was performed 2 times with similar results.
- d) n = 3 independent biological experiments. Data for this analysis can be found in

Source Data. $P < 0.0001$ for HDL siCtrl vs HDL siSR-B1 by two-tailed Student's t-tests. This experiment was performed 2 times with similar results.

e) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for HDL HA-V vs HDL HA-SR-B1 by two-tailed Student's t-tests. This experiment was performed 2 times with similar results.

f) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0006$ for HDL SR-B1 vs HDL ACE2+SR-B1 by one-way ANOVA and Bonferroni's post hoc analysis, $P = 0.0016$ for HDL ACE2 vs HDL ACE2+SR-B1 by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.

g) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for HDL SR-B1 vs HDL ACE2+SR-B1 by one-way ANOVA and Bonferroni's post hoc analysis, $P = 0.0019$ for HDL ACE2 vs HDL ACE2+SR-B1 by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.

h) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0021$ for Flag-ACE2+ HA-SR-B1 (0 μg) vs Flag-ACE2+ HA-SR-B1 (0.5 μg) by one-way ANOVA and Bonferroni's post hoc analysis, $P = 0.0003$ for Flag-ACE2+ HA-SR-B1 (0 μg) vs Flag-ACE2+ HA-SR-B1 (1 μg) by one-way ANOVA and Bonferroni's post hoc analysis, $P = 0.0004$ for Flag-ACE2+ HA-SR-B1 (0 μg) vs Flag-ACE2+ HA-SR-B1 (2 μg) by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.

Figure 4

a) This experiment was performed 2 times with similar results.

b) This experiment was performed 3 times with similar results.

c) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0002$ for HDL siCtrl vs HDL siSR-B1 by two-tailed Student's t-tests. This experiment was performed 3 times with similar results.

d) $n = 3$ independent biological experiments. Data for this analysis can be found in

Source Data. $P = 0.0076$ for HDL HA-V vs HDL HA-SR-B1 by two-tailed Student's t-tests. This experiment was performed 3 times with similar results.

e) The results shown are representative of three independent biological experiments.

f) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for HDL vs HDL ITX 5061 by one-way ANOVA and Bonferroni's post hoc analysis, $P = 0.0003$ for HDL vs HDL BLT-1 by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 3 times with similar results.

g) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for HDL vs HDL ITX 5061 by two-tailed Student's t-tests. This experiment was performed 2 times with similar results.

h) The results shown are representative of 2 independent biological experiments.

Extended Data Fig. 1

a) $n = 3$ independent biological experiments. This experiment was performed 3 times with similar results. Data for this analysis can be found in Source Data.

b) This experiment was performed 3 times with similar results.

c) This experiment was performed 2 times with similar results.

d) $n = 3$ independent biological experiments. This experiment was performed 3 times with similar results. Data for this analysis can be found in Source Data.

e) $n = 3$ independent biological experiments. This experiment was performed 3 times with similar results. Data for this analysis can be found in Source Data.

Extended Data Fig. 2

a) $n = 4$ independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for Cells only vs SARS-CoV-2pp by two-tailed Student's t-tests. This experiment was performed 3 times with similar results.

b) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0002$ for 0.1% FBS vs HDL (0.05 $\mu\text{g/mL}$) by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0.1% FBS vs HDL (0.5 $\mu\text{g/mL}$) by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0.1% FBS vs

HDL (5 µg/mL) by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 3 times with similar results.

c) This experiment was performed 3 times with similar results.

Extended Data Fig. 3

a) This experiment was performed 2 times with similar results.

b) n = 3 independent biological experiments. Data for this analysis can be found in Source Data. The data are the mean ± SEM. This experiment was performed 2 times with similar results.

c) This experiment was performed 2 times with similar results.

d) This experiment was performed 3 times with similar results.

e) This experiment was performed 3 times with similar results.

f) This experiment was performed 2 times with similar results.

g) This experiment was performed 2 times with similar results.

h) This experiment was performed 2 times with similar results.

Extended Data Fig. 4

a) This experiment was performed 2 times with similar results.

b) This experiment was performed 2 times with similar results.

c) n = 3 independent biological experiments. Data for this analysis can be found in Source Data. The data are the mean ± SEM. This experiment was performed 2 times with similar results.

d) n = 3 independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for HDL SR-B1 vs HDL ACE2+SR-B1 by one-way ANOVA and Bonferroni's post hoc analysis, $P = 0.0001$ for HDL ACE2 vs HDL ACE2+SR-B1 by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.

e) This experiment was performed 2 times with similar results.

Extended Data Fig. 5

a) This experiment was performed 2 times with similar results.

b) n=50 from 3 biologically independent samples and five technical duplication for

each sample. Data for this analysis can be found in Source Data. $P < 0.0001$ for siCtrl vs siSR-B1 by two-tailed Student's t-tests. This experiment was performed 2 times with similar results.

c) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0475$ for HDL HA-V vs HDL HA-SR-B1 by two-tailed Student's t-tests. This experiment was performed 2 times with similar results.

d) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0115$ for HDL HA-V vs HDL HA-SR-B1 by two-tailed Student's t-tests. This experiment was performed 2 times with similar results.

e) This experiment was performed 2 times with similar results.

f) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. Nonsignificant (ns) by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.

g) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. Nonsignificant (ns) by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.

h) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P < 0.0001$ for 0 μM ITX 5061 vs 1.56 μM ITX 5061 by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0 μM ITX 5061 vs 6.25 μM ITX 5061 by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0 μM ITX 5061 vs 25 μM ITX 5061 by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0 μM ITX 5061 vs 100 μM ITX 5061 by one-way ANOVA and Bonferroni's post hoc analysis. This experiment was performed 2 times with similar results.

i) $n = 3$ independent biological experiments. Data for this analysis can be found in Source Data. $P = 0.0038$ for 0 μM BLT-1 vs 6.25 μM BLT-1 by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0 μM BLT-1 vs 12.5 μM BLT-1 by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0 μM BLT-1 vs 25 μM BLT-1 by one-way ANOVA and Bonferroni's post hoc analysis, $P < 0.0001$ for 0 μM BLT-1 vs 50 μM BLT-1 by one-way ANOVA and Bonferroni's post hoc

analysis. This experiment was performed 2 times with similar results.

Extended Data Fig. 6

- a) The results shown are representative of 2 independent biological experiments.
- b) The results shown are representative of 2 independent biological experiments.