

**Table S1.** *p*-values of the *post hoc* analysis presented in Figure 5a (stratum corneum corticosterone).

	Mean $\pm$ SD	KO aged veh	WT aged veh	WT aged INHI	WT young veh	WT young INHI
KO aged veh	3987.51 $\pm$ 922.88	N/A	0.069	0.320	0.827	>0.999
WT aged veh	5461.94 $\pm$ 1465.21		N/A	0.008	0.022	0.151
WT aged INHI	3373.46 $\pm$ 333.61			N/A	>0.999	0.548
WT young veh	4244.20 $\pm$ 1741.36				N/A	>0.999
WT young INHI	4211.6 $\pm$ 1297.88					N/A

SD, standard deviation; KO, knock-out; WT, wild-type; INHI, 11 $\beta$ -HSD1 inhibitor; veh, vehicle; N/A, not applicable.

**Table S2.** *p*-values of the *post hoc* analysis presented in Figure 5b (corneodesmosome density).

	Mean $\pm$ SD	KO aged veh	WT aged veh	WT aged INHI	WT young veh	WT young INHI
KO aged veh	2.39 $\pm$ 0.87	N/A	0.033	0.202	0.281	0.097
WT aged veh	1.00 $\pm$ 0.15		N/A	0.036	0.194	0.183
WT aged INHI	1.80 $\pm$ 0.72			N/A	0.833	0.755
WT young veh	1.84 $\pm$ 1.08				N/A	0.955
WT young INHI	1.63 $\pm$ 0.69					N/A

SD, standard deviation; KO, knock-out; WT, wild-type; INHI, 11 $\beta$ -HSD1 inhibitor; veh, vehicle; N/A, not applicable.

**Table S3.** *p*-values of the *post hoc* analysis presented in Figure 6a (ceramides).

	Mean $\pm$ SD	KO aged veh	WT aged veh	WT aged INHI	WT young veh	WT young INHI
KO aged veh	234.96 $\pm$ 42.03	N/A	0.530	0.343	0.003	0.003
WT aged veh	212.77 $\pm$ 27.75		N/A	0.008	0.008	0.008
WT aged INHI	259.56 $\pm$ 10.78			N/A	0.008	0.008
WT young veh	363.26 $\pm$ 42.52				N/A	0.056
WT young INHI	442.53 $\pm$ 52.31					N/A

SD, standard deviation; KO, knock-out; WT, wild-type; INHI, 11 $\beta$ -HSD1 inhibitor; veh, vehicle; N/A, not applicable.

**Table S4.** *p*-values of the *post hoc* analysis presented in Figure 6a (cholesterol).

	Mean $\pm$ SD	KO aged veh	WT aged veh	WT aged INHI	WT young veh	WT young INHI
<b>KO aged veh</b>	48.21 $\pm$ 4.83	N/A	0.639	0.048	0.005	0.003
<b>WT aged veh</b>	49.72 $\pm$ 3.20		N/A	0.095	0.016	0.008
<b>WT aged INHI</b>	56.71 $\pm$ 5.58			N/A	0.310	0.016
<b>WT young veh</b>	60.16 $\pm$ 5.50				N/A	0.056
<b>WT young INHI</b>	67.67 $\pm$ 4.88					N/A

SD, standard deviation; KO, knock-out; WT, wild-type; INHI, 11 $\beta$ -HSD1 inhibitor; veh, vehicle; N/A, not applicable.

**Table S5.** *p*-values of the *post hoc* analysis presented in Figure 6a (total fatty acids).

	Mean $\pm$ SD	KO aged veh	WT aged veh	WT aged INHI	WT young veh	WT young INHI
<b>KO aged veh</b>	48.21 $\pm$ 4.83	N/A	0.073	0.003	0.003	0.003
<b>WT aged veh</b>	49.72 $\pm$ 3.20		N/A	0.008	0.008	0.008
<b>WT aged INHI</b>	56.71 $\pm$ 5.58			N/A	>0.999	0.421
<b>WT young veh</b>	60.16 $\pm$ 5.50				N/A	0.310
<b>WT young INHI</b>	67.67 $\pm$ 4.88					N/A

SD, standard deviation; KO, knock-out; WT, wild-type; INHI, 11 $\beta$ -HSD1 inhibitor; veh, vehicle; N/A, not applicable.