# Supplementary Figure 1

**Figure 3c**

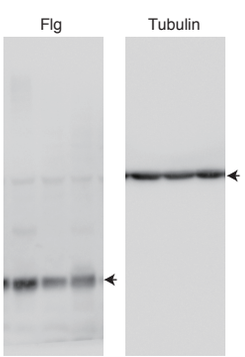



**Figure 4a**

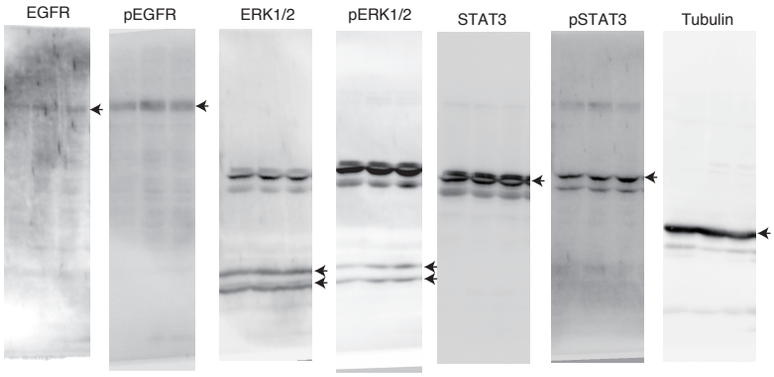



**Figure 5b**

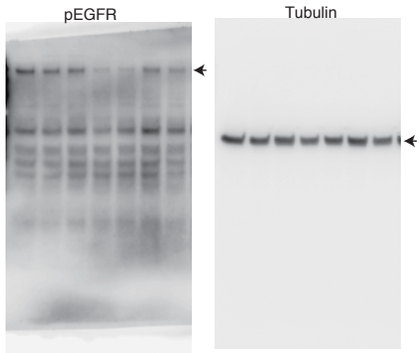



**Figure 5c**

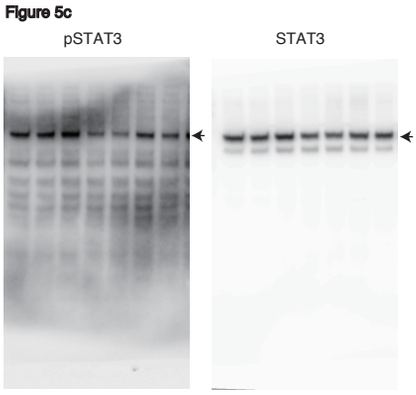



**Figure 7b**

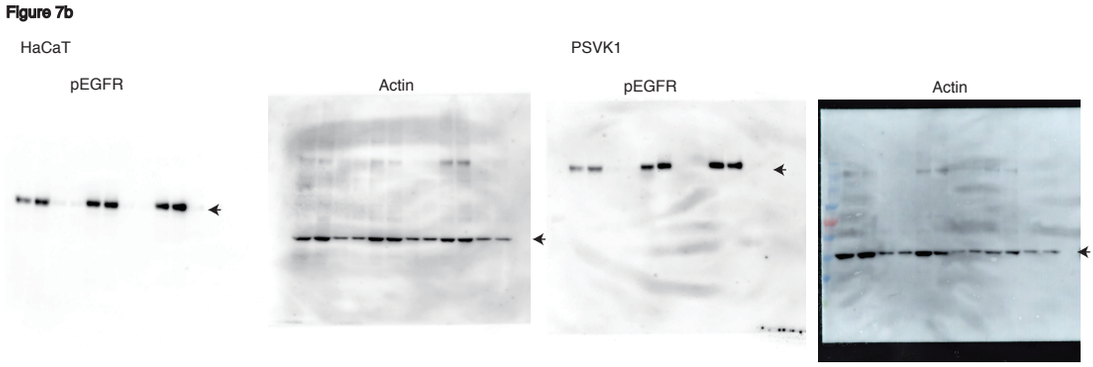
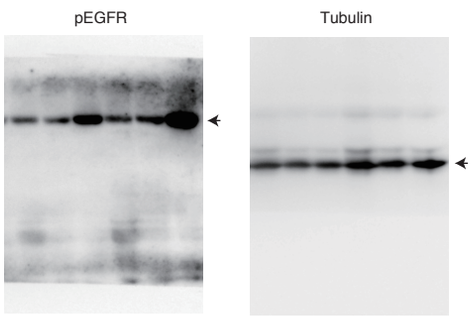



**Figure 8h**



**Supplementary Table 1**

**Disaccharide composition of CS chains from skin of WT (*C6st-1*$^{+/+}$), HET (*C6st-1*$^{+/-}$), and KO (*C6st-1*$^{-/-}$) newborn mice.**

Values are expressed as a percent of total disaccharide units, and the means ± s.d. of three determinations.

| CS-disaccharide unit | CS-disaccharides (mol %) | | |
|---|---|---|---|
| | WT | HET | KO |
| ΔDi-0S[a] | 22.6±0.7 | 18.9±4.9 | 21.0±2.4 |
| ΔDi-6S | 11.4±3.7 | 4.2±1.3 | ND |
| ΔDi-4S | 61.4±4.4 | 71.6±3.4 | 75.1±1.9 |
| ΔDi-diS$_D$ | 1.0±0.2 | ND | ND |
| ΔDi-diS$_E$ | 3.5±1.1 | 5.3±2.1 | 4.0±3.0 |

[a]Abbreviations:

ΔDi-0S ΔHexAα1-3GalNAc
ΔDi-6S ΔHexAα1-3GalNAc(6-*O*-Sulfate)
ΔDi-4S ΔHexAα1-3GalNAc(4-*O*-Sulfate)
ΔDi-diS$_D$ ΔHexA(2-*O*-Sulfate)α1-3GalNAc(6-*O*-Sulfate)
ΔDi-diS$_E$ ΔHexAα1-3GalNAc(4-, 6-*O*-Sulfate))

[b]ND, not detected.

**Supplementary Table 2**

**Disaccharide composition of CS chains from primary mouse keratinocytes and two human keratinocyte cell lines, HaCaT and PSVK1.**

Values are expressed as pmol of disaccharide per mg of dried homogenates of these cells, and the means ± s.d. of three determinations.

| | Primary mouse keratinocytes | HaCaT | PSVK1 |
|---|---|---|---|
| CS disaccharides (pmol/mg) (mol %) | | | |
| ΔDi-0S[a] | 8.1±2.4 (24.0) | 5.1±0.8 (1.9) | 3.3±2.4 (6.8) |
| ΔDi-6S | 2.4±0.2 (7.1) | 27.9±3.9 (10.3) | 11.5±0.5 (23.9) |
| ΔDi-4S | 20.1±4.1 (59.5) | 231.2±42.2 (85.6) | 28.0±9.7 (58.0) |
| ΔDi-di$S_D$ | 1.1±0.2 (3.3) | 2.4±1.1 (0.9) | 0.3±0.1 (0.7) |
| ΔDi-di$S_E$ | 2.1±0.4 (6.1) | 3.5±4.1 (1.3) | 5.1±1.5 (10.6) |
| ΔDi-triS | ND[b] | ND | ND |
| Total amount (pmol/mg) | | | |
| | 33.8±7.0 | 270.2±50.4 | 48.3±11.9 |

Values are expressed as pmol of disaccharide per mg of dried cell homogenates and as means ± s.d. of three determinations.

[a]Abbreviations: ΔDi-0S, ΔHexAα1-3GalNAc; ΔDi-6S, ΔHexAα1-3GalNAc(6-*O*-Sulfate) ; ΔDi-4S, ΔHexAα1-3GalNAc(4-*O*-Sulfate); ΔDi-di$S_D$, ΔHexA(2-*O*-Sulfate)α1-3GalNAc(6-*O*-Sulfate); ΔDi-di$S_E$, ΔHexAα1-3GalNAc(4-, 6-*O*-Sulfate)); ΔDi-triS, ΔHexA(2-*O*-Sulfate)α1-3GalNAc(4-, 6-*O*-Sulfate);

[b]ND, not detected.

**Supplementary Table 3**

**Primers used for real-time PCR**

| Gene Name | 5’-primer | 3’-primer |
|---|---|---|
| mAREG | 5’-GGTCTTAGGCTCAGGCCATTA-3’ | 5’-CGCTTATGGTGGAAACCTCTC-3’ |
| mCLDN1 | 5’-TATCCCTTACAGATCGCTGGAC-3’ | 5’-CTGCCGATGAAAGCTGACACT-3’ |
| mCLDN5 | 5’-GCAAGGTGTATGAATCTGTGCT-3’ | 5’-GTCAAGGTAACAAAGAGTGCCA-3’ |
| mEGF | 5’-AGCATCTCTCGGATTGACCCA-3’ | 5’-CCTGTCCCGTTAAGGAAAACTCT-3’ |
| mFAM20B | 5’-GCCTTAAAATCTGCCATGGC-3’ | 5’-GGCATCCTGTCTTCCACCAG-3’ |
| mG3PDH | 5’-CATCTGAGGGCCCACTG-3’ | 5’-GAGGCCATGTAGGCCATGA-3’ |
| mHB-EGF | 5’-CGGGGAGTGCAGATACCTG-3’ | 5’-TTCTCCACTGGTAGAGTCAGC-3’ |
| mIL-1$\beta$ | 5’-GATCCACACTCTCCAGCTGCA-3’ | 5’-GATCCACACTCTCCAGCTGCA-3’ |
| mIL-6 | 5’-TAGTCCTTCCTACCCCAATTTCC-3’ | 5’-TTGGTCCTTAGCCACTCCTTC-3’ |
| mIL-17a | 5’-CCACGTCACCCTGGACTCTC-3’ | 5’-CTCCGCATTGACACAGCG-3’ |
| mIL-23a | 5’-ATGCTGGATTGCAGAGCAGTA-3’ | 5’-ACGGGGCACATTATTTTTAGTCT-3’ |
| mIvl | 5’-GTCCCATCAACACACACTGC-3’ | 5’-CTCCTCATGTTTGGGAAAGC-3’ |
| mK10 | 5’-GCCTCCTACATGGACAAAGTC-3’ | 5’-GCTTCTCGTACCACTCCTTGA-3’ |
| mK14 | 5’-CAGTATCCGATCTCTTCATGCG-3’ | 5’-GGGCTCACAGCCGGTTTCCTG-3’ |
| mLOR | 5’-GCGGATCGTCCCAACAGTATC-3’ | 5’-TGAGAGGAGTAATAGCCCCCT-3’ |
| mOCLN | 5’-TTGAAAGTCCACCTCCTTACAGA-3’ | 5’-CCGGATAAAAAGAGTACGCTGG-3’ |
| mTGF-α | 5’-CACTCTGGGTACGTGGGTG-3’ | 5’-CACAGGTGATAATGAGGACAGC-3’ |
| mTMG1 | 5’-TCTGGGCTCGTTGTTGTGG-3’ | 5’-AACCAGCATTCCCTCTCGGA-3’ |
| mTNF-α | 5’-CATCTTCTCAAAATTCGAGTGACAA-3’ | 5’-TGGGAGTAGACAAGGTACAACCC-3’ |