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Identification of autophagy-regulated proteins by proteomic analysis of tape-stripped stratum corneum

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Autophagy is one of the main mechanisms for the degradation of organelles and intracellular proteins. The substrates of autophagy are enclosed in vesicles which fuse with lysosomes. Autophagy is active during stress responses and terminal differentiation of keratinocytes forming the stratum corneum (SC) and skin appendages. Dysfunctions of autophagy are implicated in the etiology of skin diseases such as psoriasis [1, 2]. Methods and markers for the detection of impairments of autophagy are required to further validate the clinical significance of autophagy.

Here, we investigated whether the lack of autophagy in keratinocytes can be detected by the proteomic analysis of the SC. As a model, we utilized *Atg7*$^{f/f}$ *Krt14-Cre* mice (*Atg7-EKO* for *Atg7* epidermal knockout, n=6), in which the essential autophagy gene *Atg7* is deleted specifically in keratinocytes, in comparison to fully autophagy-competent mice (*Atg7*$^{f/f}$, denoted wild-type, WT, n=5) [3]. SC was sampled by tape-stripping from the soles of sacrificed mice and subjected to label-free proteomics as previously described [4] (Supplementary Methods) (Fig. 1a). Keratins Krt2 and Krt10 were identified as the quantitatively dominant proteins in the SC of both WT and *Atg7-EKO* mice (Fig. 1b). Among more than 170 proteins detected (Suppl. Table S1), 10 proteins were significantly increased in abundance when autophagy was suppressed (adjusted P-value <0.05) (Fig. 1b, c).

Five of the proteins elevated in the absence of autophagy, namely pyruvate kinase (Pkm), elongation factor 2 (Eef2), malate dehydrogenase 2 (Mdh2), valosin-containing protein (Vcp) and galectin 7 (Lgals7), have recently been found to be elevated in autophagy-deficient hair shafts, whereas the five others are not significantly elevated or have not been quantified in hair shafts [5]. Interestingly, the increase of lamin A/C (Lmna) in *Atg7-EKO* SC is in line with the proposed role of autophagy in degrading components of the nucleus during the cornification of epidermal keratinocytes [1]. Furthermore, the skin barrier-associated protein filaggrin (Flg) and two desmosomal proteins, junction plakoglobin (Jup) and desmoplakin (Dsp), are elevated in *Atg7-EKO* samples (Fig. 1a).

These data indicate that the impairment of keratinocyte autophagy manifests in alteration of the SC that can be detected by proteomic analysis of tape-strip samples. Notably, the autophagy-dependent changes in the protein composition of the SC are less pronounced than those of hair shafts in which a broad range of proteins are significantly increased upon suppression of autophagy [5]. The lower number of autophagy-related marker proteins in the SC is likely caused by additional autophagy-independent modifications of the proteome, such as proteolysis by endogenous enzymes and proteases of commensal microbes. This study had limitations such as the incomplete sampling of the SC and the lack of a comparison with interfollicular epidermis. We conclude that proteomics of the SC is a promising method for the analysis of autophagic activity in the epidermis, with candidate markers being provided by the present study in a genetically well-defined mouse model. Further studies on human SC and cornified skin appendages are required to determine the most useful approach for the detection of autophagy-dependent aberrations of keratinocyte differentiation in skin diseases.

Ethics statement

No experiments on live animals were performed in this study. In agreement with the national laws of Austria, a permission for killing animals for tissue preparation was not required.

Data availability statement

The raw data are available at the MassIVE Proteomics repository (https://massive.ucsd.edu/) with MassIVE id number MSV000095353.

Author Contributions

S.S., R.H.R. and L.E. designed the study. S.S., N.K., I.M.N., R.H.R. and L.E. collected and analyzed the data. S.S. and L.E. wrote the original draft of the manuscript. N.K., I.M.N. and R.H.R. reviewed and edited the manuscript. R.H.R. and L.E. supervised the study. All authors have read and approved the final manuscript.

Competing Interests

The authors have no competing interests.

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Figure legend

Figure 1. Proteomic analysis of sole skin stratum corneum (SC) from wildtype (WT) and *Atg7* epidermal knockout (EKO) mice. (a) Schematic depiction of the study design. **(b)** The normalized protein abundance is shown for the predominant keratins of sole skin and ten proteins that differed significantly (adjusted *P*-values <0.05, * and <0.01, **) in abundance in WT and EKO SC. Bars and error bars show means and standard deviations, respectively. **(c)** Fold changes (EKO/WT) of the proteins shown in panel **b**. Note that the vertical axes in both panels show dimensionless quantities. ns, not significant.

Supplementary methods

Mice

Atg7$^{f/f}$ *K14-Cre* (EKO) and *Atg7*$^{f/f}$ (WT) mice were maintained under standard housing conditions [3, 5]. Male mice were sacrificed at an age of 9-10 weeks immediately before samples were prepared.

Tape-stripping of stratum corneum

Stratum corneum was prepared from the soles of hind limb feet by repeated application of D-Squame discs (Cuderm, Dallas, TX, USA). The first adhesive disc containing the most superficial layer of the stratum corneum was excluded from further analysis. The next three discs containing deeper layers of the stratum corneum were collected and processed for subsequent proteomic analysis as previously described [4].

Mass spectrometry and protein identification

The trypsin-digested samples were analyzed by liquid chromatography – tandem mass spectrometry (LC-MS/MS) on a Thermo Scientific Dionex UltiMate 3000 RSLC system according to a published method [5]. The raw data were analyzed using PEAKS Studio (Bioinformatics Solutions Inc., Waterloo, ON, Canada) as previously described [5].

Statistical analysis

The statistical analysis was performed using GraphPad Prism version 8.0.1 for Windows (GraphPad Software, San Diego, CA, USA). Two-tailed t-tests with a correction for multiple comparisons using the Holm-Šídák method (alpha = 0.05) were performed to determine the significance of differences.

Supplementary Table S1. Proteomic analysis of the stratum corneum of wildtype (WT) and Atg7 epidermal knockout (EKO) mice: Normalized abundance values

			Abundance (normalized area) WT					Abundance (normalized area) EKO													
Protein	Description	Accession	WT1	WT2	WT3	WT4	WT5	EKO1	EKO2	EKO3	EKO4	EKO5	EKO6	WT mean	EKO mean	WT SD	EKO SD	EKO/WT	P value	Adjusted P value	Significance
Krt2	Keratin type II cytoskeletal 2 epidermal OS=Mus musculus OX=10090 GN=Krt2 PE=1 SV=1	Q3TTY5	4,13E-01	3,64E-01	4,38E-01	4,16E-01	3,69E-01	4,49E-01	3,59E-01	4,05E-01	4,01E-01	4,20E-01	4,05E-01	4,00E-01	4,06E-01	2,85E-02	2,69E-02	1,02	0,733483	>0,999999	n.s.
Krt10	Keratin type I cytoskeletal 10 OS=Mus musculus OX=10090 GN=Krt10 PE=1 SV=1	A2A513	3,43E-01	2,58E-01	3,57E-01	3,44E-01	3,10E-01	3,45E-01	2,79E-01	3,31E-01	3,18E-01	2,94E-01	2,99E-01	3,22E-01	3,11E-01	3,55E-02	2,26E-02	0,97	0,575524	>0,999999	n.s.
Hrnr	Hornerin OS=Mus musculus OX=10090 GN=Hrnr PE=1 SV=1	E9QNP3	8,72E-03	1,04E-02	1,25E-02	1,24E-02	1,09E-02	1,35E-02	1,10E-02	1,46E-02	1,03E-02	1,29E-02	1,40E-02	1,10E-02	1,27E-02	1,39E-03	1,56E-03	1,16	0,116284	0,99999	n.s.
Krt1	Keratin type II cytoskeletal 1 OS=Mus musculus OX=10090 GN=Krt1 PE=1 SV=4	P04104	5,02E-02	4,18E-02	7,02E-02	6,36E-02	4,78E-02	3,87E-02	4,32E-02	4,00E-02	3,93E-02	3,40E-02	4,12E-02	5,47E-02	3,94E-02	1,05E-02	2,82E-03	0,72	0,012827	0,835913	n.s.
Krt81	Keratin type II cuticular Hb1 OS=Mus musculus OX=10090 GN=Krt81 PE=2 SV=2	Q9ERE2	1,35E-03	1,15E-03	4,66E-04	2,75E-04	9,10E-04	6,20E-04	2,11E-03	1,35E-03	2,02E-03	2,90E-03	1,14E-03	8,31E-04	1,69E-03	4,05E-04	7,42E-04	2,03	0,065591	0,999406	n.s.
Krt83	Keratin 83 OS=Mus musculus OX=10090 GN=Krt83 PE=1 SV=1	E9Q1Y9	8,50E-04	6,73E-04	2,51E-04	2,31E-04	6,13E-04	3,53E-04	1,41E-03	1,23E-03	1,10E-03	1,58E-03	6,79E-04	5,24E-04	1,06E-03	2,44E-04	4,23E-04	2,02	0,049459	0,997071	n.s.
Krt33b	Keratin type I cuticular Ha3-II OS=Mus musculus OX=10090 GN=Krt33b PE=1 SV=2	Q61897	8,25E-03	3,85E-03	2,31E-03	1,81E-03	4,56E-03	2,43E-03	8,96E-03	7,22E-03	7,83E-03	1,10E-02	6,01E-03	4,15E-03	7,24E-03	2,28E-03	2,65E-03	1,74	0,0968	0,999943	n.s.
Krt31	Keratin type I cuticular Ha1 OS=Mus musculus OX=10090 GN=Krt31 PE=1 SV=2	Q61765	1,36E-03	2,04E-01	1,90E-04	3,13E-02	1,27E-01	5,18E-04	8,32E-02	2,22E-03	1,39E-03	1,77E-03	7,23E-02	7,26E-02	2,69E-02	8,01E-02	3,61E-02	0,37	0,285567	>0,999999	n.s.
Krt86	Keratin type II cuticular Hb6 OS=Mus musculus OX=10090 GN=Krt86 PE=2 SV=2	P97861	7,69E-05	8,71E-05	1,21E-05	2,35E-05	1,01E-04	2,43E-05	1,45E-04	2,24E-04	1,97E-04	3,00E-04	8,29E-05	6,00E-05	1,62E-04	3,55E-05	9,10E-05	2,70	0,061206	0,999153	n.s.
Krt87	Keratin type II cuticular 87 OS=Mus musculus OX=10090 GN=Krt87 PE=2 SV=2	Q6IMF0	5,33E-03	4,06E-03	2,07E-03	1,38E-03	3,53E-03	1,87E-03	6,81E-03	7,41E-03	7,27E-03	9,41E-03	4,11E-03	3,27E-03	6,15E-03	1,41E-03	2,46E-03	1,88	0,066089	0,999406	n.s.
Krt34	Keratin type I cuticular Ha4 OS=Mus musculus OX=10090 GN=Krt34 PE=2 SV=1	Q9D646	2,52E-03	1,98E-03	6,43E-04	3,80E-04	1,37E-03	1,12E-03	4,88E-03	4,77E-03	2,95E-03	3,82E-03	1,87E-03	1,38E-03	3,23E-03	8,02E-04	1,40E-03	2,34	0,041721	0,993988	n.s.
Krt33a	Keratin type I cuticular Ha3-I OS=Mus musculus OX=10090 GN=Krt33a PE=1 SV=1	Q8K0Y2	3,87E-03	1,66E-03	7,59E-04	8,34E-04	1,89E-03	1,05E-03	3,54E-03	3,16E-03	2,75E-03	4,63E-03	2,35E-03	1,80E-03	2,91E-03	1,13E-03	1,10E-03	1,62	0,169083	>0,999999	n.s.
Krt24	Keratin type I cytoskeletal 24 OS=Mus musculus OX=10090 GN=Krt24 PE=2 SV=2	A1L317	1,59E-02	1,84E-02	2,17E-02	2,74E-02	2,26E-02	2,38E-02	2,11E-02	2,40E-02	1,87E-02	2,06E-02	2,10E-02	2,12E-02	2,15E-02	3,91E-03	1,86E-03	1,02	0,870658	>0,999999	n.s.
Krt5	Keratin type II cytoskeletal 5 OS=Mus musculus OX=10090 GN=Krt5 PE=1 SV=1	Q922U2	6,97E-03	3,98E-03	5,00E-03	7,08E-03	5,78E-03	6,68E-03	4,50E-03	4,16E-03	5,76E-03	4,99E-03	6,97E-03	5,76E-03	5,51E-03	1,18E-03	1,05E-03	0,96	0,742978	>0,999999	n.s.
Krt85	Keratin type II cuticular Hb5 OS=Mus musculus OX=10090 GN=Krt85 PE=1 SV=2	Q9Z2T6	4,32E-03	3,84E-03	1,58E-03	1,08E-03	3,01E-03	2,35E-03	7,32E-03	6,57E-03	4,79E-03	7,35E-03	3,69E-03	2,77E-03	5,34E-03	1,25E-03	1,89E-03	1,93	0,04261	0,994382	n.s.
Krt14	Keratin type I cytoskeletal 14 OS=Mus musculus OX=10090 GN=Krt14 PE=1 SV=2	Q61781	2,01E-03	3,19E-03	1,68E-03	1,47E-03	2,04E-03	3,66E-03	2,96E-03	2,29E-03	2,36E-03	1,21E-03	1,35E-03	2,08E-03	2,30E-03	5,94E-04	8,56E-04	1,11	0,660929	>0,999999	n.s.
Krt6a	Keratin type II cytoskeletal 6A OS=Mus musculus OX=10090 GN=Krt6a PE=1 SV=3	P50446	1,20E-04	1,40E-04	9,03E-05	1,46E-04	1,31E-04	1,65E-04	8,10E-05	1,15E-04	1,23E-04	1,31E-04	9,46E-05	1,25E-04	1,18E-04	1,95E-05	2,68E-05	0,94	0,663008	>0,999999	n.s.
Krt16	Keratin type I cytoskeletal 16 OS=Mus musculus OX=10090 GN=Krt16 PE=1 SV=3	Q9Z2K1	1,96E-03	1,11E-03	6,96E-04	1,35E-03	1,31E-03	2,94E-03	1,32E-03	1,79E-03	1,97E-03	2,22E-03	8,53E-04	1,29E-03	1,85E-03	4,11E-04	6,61E-04	1,44	0,167316	>0,999999	n.s.
Krt6b	Keratin type II cytoskeletal 6B OS=Mus musculus OX=10090 GN=Krt6b PE=1 SV=3	Q9Z331	8,95E-05	3,68E-05	8,01E-05	2,58E-05	4,99E-05	1,11E-04	8,47E-05	4,15E-05	7,17E-05	1,13E-04	4,59E-05	5,64E-05	7,80E-05	2,46E-05	2,82E-05	1,38	0,257044	>0,999999	n.s.
Krt77	Keratin type II cytoskeletal 1b OS=Mus musculus OX=10090 GN=Krt77 PE=1 SV=1	Q6IFZ6	1,64E-03	2,76E-04	3,51E-04	8,69E-04	5,94E-04	1,55E-03	8,48E-04	4,88E-04	9,27E-04	1,13E-03	5,73E-04	7,47E-04	9,20E-04	4,95E-04	3,55E-04	1,23	0,555555	>0,999999	n.s.
Krt78	Keratin 78 OS=Mus musculus OX=10090 GN=Krt78 PE=1 SV=1	E9Q0F0	5,77E-03	5,71E-03	6,01E-03	6,67E-03	5,96E-03	9,70E-03	7,11E-03	8,80E-03	4,68E-02	5,26E-03	6,23E-03	6,03E-03	1,40E-02	3,43E-04	1,47E-02	2,32	0,303581	>0,999999	n.s.
Krt13	Keratin type I cytoskeletal 13 OS=Mus musculus OX=10090 GN=Krt13 PE=1 SV=2	P08730	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,65E-05	0,00E+00	0,00E+00	0,00E+00	1,74E-06	0,00E+00	0,00E+00	8,04E-06	0,00E+00	1,72E-05	#DIV/0!	0,369427	>0,999999	n.s.
Dsp	Desmoplakin OS=Mus musculus OX=10090 GN=Dsp PE=1 SV=1	E9Q557	1,18E-03	1,64E-03	2,28E-03	2,91E-03	1,21E-03	5,82E-03	4,74E-03	5,38E-03	5,42E-03	6,33E-03	6,77E-03	1,84E-03	5,74E-03	6,66E-04	6,61E-04	3,12	0,000011	0,001864	**
Kprp	Keratinocyte proline-rich protein OS=Mus musculus OX=10090 GN=Kprp PE=2 SV=1	B2RUR4	1,24E-02	1,10E-02	1,42E-02	1,36E-02	1,19E-02	1,39E-02	1,20E-02	1,18E-02	1,17E-02	1,28E-02	1,16E-02	1,26E-02	1,23E-02	1,18E-03	7,98E-04	0,98	0,638684	>0,999999	n.s.
Krt15	Keratin type I cytoskeletal 15 OS=Mus musculus OX=10090 GN=Krt15 PE=1 SV=2	Q61414	1,91E-04	1,95E-05	1,11E-03	2,23E-03	2,26E-04	1,87E-05	7,38E-05	1,30E-05	2,22E-04	8,17E-04	4,47E-04	7,55E-04	2,65E-04	8,29E-04	2,89E-04	0,35	0,252388	>0,999999	n.s.
Krt36	Keratin type I cuticular Ha6 OS=Mus musculus OX=10090 GN=Krt36 PE=1 SV=1	B1AQ75	6,78E-03	1,41E-03	1,87E-03	5,38E-03	2,31E-03	4,27E-03	3,02E-03	2,81E-03	1,53E-03	3,79E-03	2,03E-03	3,55E-03	2,91E-03	2,13E-03	9,42E-04	0,82	0,563124	>0,999999	n.s.
Krt84	Keratin type II cuticular Hb4 OS=Mus musculus OX=10090 GN=Krt84 PE=2 SV=2	Q99M73	1,18E-02	1,69E-03	3,28E-03	4,98E-03	3,20E-03	5,00E-03	5,30E-03	2,94E-03	2,42E-03	5,19E-03	3,10E-03	4,99E-03	3,99E-03	3,56E-03	1,19E-03	0,80	0,57409	>0,999999	n.s.
Gm5478	Predicted pseudogene 5478 OS=Mus musculus OX=10090 GN=Gm5478 PE=1 SV=1	A0A2R8VHP3	8,99E-04	1,31E-06	5,39E-03	5,41E-03	1,07E-03	3,95E-06	1,25E-06	1,55E-05	3,94E-03	7,79E-03	2,80E-03	2,56E-03	2,42E-03	2,35E-03	2,85E-03	0,95	0,943342	>0,999999	n.s.
Krt35	Keratin type I cuticular Ha5 OS=Mus musculus OX=10090 GN=Krt35 PE=1 SV=1	Q497I4	2,22E-03	2,22E-03	4,61E-04	8,18E-04	2,67E-03	1,28E-03	3,42E-03	5,73E-03	3,25E-03	4,74E-03	1,99E-03	1,68E-03	3,40E-03	8,70E-04	1,51E-03	2,03	0,07173	0,999565	n.s.
Krt17	Keratin type I cytoskeletal 17 OS=Mus musculus OX=10090 GN=Krt17 PE=1 SV=3	Q9QWL7	7,83E-04	2,95E-04	3,47E-04	1,08E-03	2,04E-04	3,71E-04	2,18E-04	2,80E-04	3,32E-04	4,38E-04	2,42E-04	5,41E-04	3,13E-04	3,33E-04	7,58E-05	0,58	0,176706	>0,999999	n.s.
Krt9	Keratin type I cytoskeletal 9 OS=Mus musculus OX=10090 GN=Krt9 PE=1 SV=3	Q6RHW0	5,14E-03	2,11E-03	5,40E-03	5,38E-03	4,94E-03	2,41E-03	2,81E-03	2,00E-03	1,21E-03	1,60E-03	3,34E-03	4,59E-03	2,23E-03	1,25E-03	7,17E-04	0,49	0,00629	0,611909	n.s.
Krt79	Keratin type II cytoskeletal 79 OS=Mus musculus OX=10090 GN=Krt79 PE=1 SV=2	Q8VED5	1,58E-04	5,52E-05	5,24E-05	2,01E-04	6,49E-05	1,05E-04	1,40E-04	5,22E-05	7,34E-05	1,07E-04	1,19E-04	1,06E-04	9,94E-05	6,13E-05	2,90E-05	0,94	0,830727	>0,999999	n.s.
Krt42	Keratin type I cytoskeletal 42 OS=Mus musculus OX=10090 GN=Krt42 PE=1 SV=1	Q6IFX2	8,40E-04	1,71E-04	3,90E-04	9,70E-04	1,55E-04	3,42E-04	2,47E-04	1,71E-04	1,28E-04	3,01E-04	4,34E-04	5,05E-04	2,71E-04	3,39E-04	1,03E-04	0,54	0,179827	>0,999999	n.s.
Krt75	Keratin type II cytoskeletal 75 OS=Mus musculus OX=10090 GN=Krt75 PE=1 SV=1	Q8BGZ7	8,40E-06	1,96E-06	6,51E-06	1,08E-04	3,17E-07	3,02E-06	3,00E-05	6,46E-05	8,45E-05	1,13E-04	1,70E-05	2,50E-05	5,21E-05	4,15E-05	3,89E-05	2,08	0,341117	>0,999999	n.s.
Jup	Junction plakoglobin OS=Mus musculus OX=10090 GN=Jup PE=1 SV=3	Q02257	8,36E-04	8,46E-04	1,19E-03	1,44E-03	6,66E-04	2,43E-03	1,92E-03	2,36E-03	2,67E-03	3,44E-03	2,89E-03	9,97E-04	2,62E-03	2,81E-04	4,73E-04	2,63	0,000178	0,029778	*
Loricrin	Loricrin OS=Mus musculus OX=10090 GN=Loricrin PE=2 SV=2	P18165	7,18E-03	4,22E-03	5,80E-03	5,77E-03	6,64E-03	8,20E-03	6,63E-03	6,59E-03	5,15E-03	6,79E-03	6,70E-03	5,92E-03	6,68E-03	1,00E-03	8,80E-04	1,13	0,260761	>0,999999	n.s.
Flg2	Filaggrin-2 OS=Mus musculus OX=10090 GN=Flg2 PE=1 SV=1	E9QPZ3	4,69E-05	1,77E-05	1,12E-05	1,55E-06	6,36E-05	7,11E-05	4,53E-05	2,09E-05	2,36E-05	5,22E-05	5,42E-05	2,82E-05	4,45E-05	2,33E-05	1,76E-05	1,58	0,261038	>0,999999	n.s.
Krtap13-1	Keratin-associated protein 13-1 OS=Mus musculus OX=10090 GN=Krtap13-1 PE=1 SV=1	Q8K198	4,86E-03	3,83E-03	1,18E-03	5,97E-04	2,89E-03	1,79E-03	7,03E-03	5,04E-03	5,39E-03	8,03E-03	3,23E-03	2,67E-03	5,08E-03	1,59E-03	2,12E-03	1,90	0,089707	0,999905	n.s.
Krtap3-2	Keratin-associated protein 3-2 OS=Mus musculus OX=10090 GN=Krtap3-2 PE=2 SV=2	Q9D638	7,57E-04	3,04E-04	7,49E-04	1,03E-03	4,45E-04	1,76E-04	1,36E-03	4,95E-04	9,85E-04	1,74E-03	8,09E-04	6,57E-04	9,27E-04	2,55E-04	5,19E-04	1,41	0,361515	>0,999999	n.s.
Krt32	Keratin type I cuticular Ha2 OS=Mus musculus OX=10090 GN=Krt32 PE=1 SV=2	Q62168	1,99E-04	1,43E-04	1,56E-04	1,97E-04	1,19E-04	1,41E-04	6,63E-04	5,85E-04	9,60E-04	1,55E-03	4,64E-04	1,63E-04	7,27E-04	3,09E-05	4,41E-04	4,47	0,029631	0,973736	n.s.
Krt73	Keratin type II cytoskeletal 73 OS=Mus musculus OX=10090 GN=Krt73 PE=1 SV=1	Q6NXH9	5,97E-04	2,52E-04	3,87E-04	7,96E-04	1,98E-04	5,67E-04	3,74E-04	2,79E-04	2,25E-04	1,64E-04	8,17E-04	4,46E-04	4,04E-04	2,23E-04	2,25E-04	0,91	0,787262	>0,999999	n.s.
Krtap1-3	Keratin-associated protein 1-3 OS=Mus musculus OX=10090 GN=Krtap1-3 PE=4 SV=1	A2A588	1,08E-04	1,89E-04	3,73E-05	1,81E-05	4,85E-05	1,22E-04	4,61E-04	3,16E-04	1,90E-04	3,45E-04	1,95E-04	8,02E-05	2,72E-04	6,22E-05	1,14E-04	3,39	0,0141	0,859098	n.s.
Krtap3-1	Keratin-associated protein 3-1 OS=Mus musculus OX=10090 GN=Krtap3-1 PE=1 SV=1	A2A591	1,14E-04	2,63E-05	3,85E-05	4,71E-05	4,33E-05	2,40E-05	1,36E-04	1,18E-04	1,35E-04	2,45E-04	8,75E-05	5,39E-05	1,24E-04	3,11E-05	6,61E-05	2,31	0,079077	0,999756	n.s.
Krtap1-4	Keratin-associated protein 1-4 OS=Mus musculus OX=10090 GN=Krtap1-4 PE=2 SV=1	Q3V2D6	5,97E-05	6,87E-05	7,48E-06	1,38E-05	8,08E-05	3,20E-05	1,69E-04	1,55E-04	1,55E-04	2,46E-04	1,03E-04	4,75E-05	1,44E-04	3,15E-05	6,52E-05	3,02	0,023647	0,953259	n.s.
Gm11938	Keratin-associated protein 2-4 OS=Mus musculus OX=10090 GN=Gm11938 PE=2 SV=1	Q9D3H4	2,92E-02	2,28E-02	9,71E-03	5,74E-03	1,68E-02	1,77E-02	5,69E-02	4,74E-02	3,95E-02	4,82E-02	2,65E-02	1,69E-02	3,94E-02	8,51E-03	1,35E-02	2,34	0,016695	0,893454	n.s.
Ide	Insulin-degrading enzyme (Fragment) OS=Mus musculus OX=10090 GN=Ide PE=1 SV=1	F6RP39	6,30E-04	7,23E-04	1,16E-03	1,03E-03	7,46E-04	9,52E-04	8,64E-04	9,82E-04	1,01E-03	1,27E-03	1,19E-03	8,56E-04	1,04E-03	2,00E-04	1,40E-04	1,22	0,137108	0,999998	n.s.
Serpinb12	Serpin B12 OS=Mus musculus OX=10090 GN=Serpinb12 PE=2 SV=1	Q9D7P9	1,61E-03	8,85E-04	1,23E-03	1,70E-03	1,25E-03	1,42E-03	1,12E-03	1,57E-03	1,32E-03	1,63E-03	1,64E-03	1,34E-03	1,43E-03	2,93E-04	1,74E-04	1,07	0,548755	>0,999999	n.s.
Gm11568	Predicted gene 11568 OS=Mus musculus OX=10090 GN=Gm11568 PE=4 SV=1	A2A4M2	1,30E-04	1,10E-04	2,80E-05	1,12E-04	3,19E-04	1,07E-04	1,85E-04	2,61E-04	2,76E-04	4,41E-04	2,29E-04	1,40E-04	2,50E-04	9,62E-05	1,02E-04	1,79	0,132722	0,999998	n.s.
Krt4	Keratin type II cytoskeletal 4 OS=Mus musculus OX=10090 GN=Krt4 PE=1 SV=2	P07744	0,00E+00	0,00E+00	4,28E-05	3,42E-07	0,00E+00	0,00E+00	1,82E-08	0,00E+00	7,38E-07	1,85E-06	4,60E-06	8,63E-06	1,20E-06	1,71E-05	1,66E-06	0,14	0,36321	>0,999999	n.s.
Cdsn	Corneodesmosin OS=Mus musculus OX=10090 GN=Cdsn PE=2 SV=2	Q7TPC1	7,51E-04	6,50E-04	1,11E-03	1,30E-03	1,16E-03	7,84E-04	6,62E-04	7,76E-04	7,25E-04	6,67E-04	1,07E-03	9,94E-04	7,81E-04	2,50E-04	1,39E-04	0,79	0,139449	0,999998	n.s.
Tgm3	Protein-glutamine gamma-glutamyltransferase E OS=Mus musculus OX=10090 GN=Tgm3 PE=1 SV=	Q08189	1,80E-03	8,66E-04	1,24E-03	1,53E-03	1,08E-03	1,32E-03	1,23E-03	1,55E-03	1,40E-03	1,59E-03	1,41E-03	1,30E-03	1,42E-03	3,29E-04	1,25E-04	1,09	0,498557	>0,999999	n.s.
Krt82	Keratin type II cuticular Hb2 OS=Mus musculus OX=10090 GN=Krt82 PE=1 SV=2	Q99M74	2,96E-04	2,78E-04	7,31E-05	8,86E-05	1,83E-04	2,74E-04	1,59E-03	9,15E-04	9,11E-04	1,30E-03	5,81E-04	1,84E-04	9,33E-04	9,25E-05	4,33E-04	5,06	0,007634	0,678305	n.s.
Sprr1a	Cornifin-A OS=Mus musculus OX=10090 GN=Sprr1a PE=1 SV=1	Q62266	1,58E-03	1,58E-03	1,41E-03	2,29E-03	1,65E-03	3,74E-03	1,98E-03	2,15E-03	2,47E-03	2,00E-03	1,39E-03	1,70E-03	2,29E-03	3,07E-04	7,24E-04	1,34	0,160549	>0,999999	n.s.
2310050C09Rik	RIKEN cDNA 2310050C09 gene OS=Mus musculus OX=10090 GN=2310050C09Rik PE=1 SV=1	G5E8Z3	1,76E-03	1,20E-03	1,64E-03	2,66E-03	2,38E-03	1,41E-03	1,52E-03	1,49E-03	1,69E-03	1,76E-03	1,77E-03	1,93E-03	1,61E-03	5,27E-04	1,40E-04	0,83	0,225699	>0,999999	n.s.
Gm11559	Predicted gene 11559 OS=Mus musculus OX=10090 GN=Gm11559 PE=2 SV=1	Q9D3H7	9,19E-05	2,16E-04	5,59E-05	1,68E-05	6,71E-05	1,35E-04	4,40E-04	4,05E-04	3,22E-04	3,79E-04	1,87E-04	8,96E-05	3,11E-04	6,78E-05	1,13E-04	3,48	0,006899	0,64355	n.s.
S100a3	Protein S100-A3 OS=Mus musculus OX=10090 GN=S100a3 PE=2 SV=1	P62818	5,65E-04	5,64E-04	1,08E-04	1,47E-04	3,92E-04	1,05E-03	2,78E-03	2,25E-03	2,59E-03	3,78E-03	1,94E-03	3,55E-04	2,40E-03	1,97E-04	8,32E-04	6,76	0,000894	0,134838	n.s.
2310057N15Rik	RIKEN cDNA 2310057N15 gene OS=Mus musculus OX=10090 GN=2310057N15Rik PE=2 SV=1	Q9D6T8	1,36E-04	8,50E-06	3,10E-05	3,57E-05	2,26E-05	2,22E-05	1,54E-05	6,26E-06	2,22E-05	6,39E-05	2,60E-05	4,68E-05	2,60E-05	4,57E-05	1,81E-05	0,56	0,378692	>0,999999	n.s.
Vsig8	V-set and immunoglobulin domain-containing protein 8 OS=Mus musculus OX=10090 GN=Vsig8 PE	Q6P3A4	1,45E-03	6,87E-04	1,83E-04	1,63E-03	9,77E-04	3,04E-04	1,21E-03	9,21E-04	1,25E-03	1,74E-03	9,61E-04	6,17E-04	1,06E-03	4,69E-04	4,33E-04	1,73	0,169798	>0,999999	n.s.
Flg	Filaggrin OS=Mus musculus OX=10090 GN=Flg PE=4 SV=1	A0A0A6YWE2	2,50E-05	3,27E-05	6,37E-05	4,23E-05	3,35E-05	5,82E-05	3,01E-05	4,74E-05	2,10E-05	8,39E-06	2,08E-05	4,36E-05	3,09E-05	1,38E-05	1,69E-05	0,71	0,256625	>0,999999	n.s.
Krt12	Keratin type I cytoskeletal 12 OS=Mus musculus OX=10090 GN=Krt12 PE=1 SV=1	Z4YJD9	6,91E-05	2,97E-05	4,88E-05	1,01E-04	8,43E-05	1,69E-05	6,95E-05	3,20E-05	6,43E-05	5,80E-05	5,53E-05	6,67E-05	4,93E-05	2,53E-05	1,87E-05	0,74	0,269592	>0,999999	n.s.
Gm11567	Predicted gene 11567 OS=Mus musculus OX=10090 GN=Gm11567 PE=2 SV=1	Q9D141	6,39E-06	1,95E-05	2,93E-08	0,00E+00	2,35E-06	2,12E-06	7,22E-05	4,38E-05	3,97E-05	6,20E-05	2,53E-05	5,66E-06	4,09E-05	7,32E-06	2,30E-05	7,22	0,015714	0,882137	n.s.
Tgm1	Protein-glutamine gamma-glutamyltransferase K OS=Mus musculus OX=10090 GN=Tgm1 PE=1 SV=	Q9JLF6	5,63E-04	5,29E-04	6,74E-04	4,93E-04	3,68E-04	6,76E-04	5,33E-04	6,05E-04	6,52E-04	8,33E-04	4,43E-04	5,25E-04	6,24E-04	9,96E-05	1,22E-04	1,19	0,22232	>0,999999	n.s.
Dsc1	Desmocollin-1 OS=Mus musculus OX=10090 GN=Dsc1 PE=1 SV=1	Q32ME9	4,84E-04	3,04E-04	9,16E-04	9,20E-04	7,62E-04	3,74E-04	3,62E-04	4,69E-04	4,01E-04	5,71E-04	7,25E-04	6,77E-04	4,83E-04	2,45E-04	1,29E-04	0,71	0,163588	>0,999999	n.s.
Krtap13	Keratin-associated protein 13 OS=Mus musculus OX=10090 GN=Krtap13 PE=2 SV=1	O88375	2,83E-04	1,86E-05	1,33E-04	8,71E-05	2,75E-05	1,77E-04	7,89E-05	4,65E-05	3,07E-05	3,22E-05	2,97E-05	1,10E-04	6,59E-05	9,60E-05	5,27E-05	0,60	0,406599	>0,999999	n.s.
Flg	Filaggrin OS=Mus musculus OX=10090 GN=Flg PE=1 SV=1	A0A0A6YXI5	2,43E-04	5,28E-04	5,82E-04	3,85E-04	4,47E-04	9,81E-04	8,58E-04	8,07E-04	7,48E-04	9,65E-04	8,03E-04	4,37E-04	8,60E-04	1,18E-04	8,60E-05	1,97	0,000157	0,026446	*
2310034C09Rik	RIKEN cDNA 2310034C09 gene OS=Mus musculus OX=10090 GN=2310034C09Rik PE=1 SV=1	Q9D746	2,24E-04	1,87E-05	7,03E-05	7,55E-05	2,72E-05	1,11E-04	5,30E-05	1,63E-05	6,62E-05	7,52E-05	3,10E-05	8,32E-05	5,88E-05	7,41E-05	3,44E-05	0,55	0,349737	>0,999999	n.s.
Krt39	Keratin type I cytoskeletal 39 OS=Mus musculus OX=10090 GN=Krt39 PE=2 SV=2	Q6IFX4	2,27E-04	6,99E-05	3,33E-05	1,20E-05	4,33E-05	4,31E-05	2,98E-04	2,36E-04	2,41E-04	3,21E-04	5,86E-05	7,71E-05	2,00E-04	7,72E-05	1,09E-04	2,59	0,089345	0,999905	n.s.
2310061N02Rik	RIKEN cDNA 2310061N02 gene OS=Mus musculus OX=10090 GN=2310061N02Rik PE=2 SV=1	Q9D6S9	3,45E-04	3,72E-04	8,26E-05	5,69E-05	2,23E-04	2,67E-04	1,07E-03	6,87E-04	4,17E-04	1,01E-03	3,80E-04	2,16E-04	6,48E-04	1,30E-04	3,05E-04	3,00	0,025551	0,958766	n.s.
Ahnak	AHNAK nucleoprotein (desmoyokin) OS=Mus musculus OX=10090 GN=Ahnak PE=1 SV=1	E9Q616	2,08E-04	2,28E-04	3,82E-04	4,09E-04	3,51E-04	2,52E-04	4,94E-04	2,48E-04	4,90E-04	3,64E-04	3,25E-04	3,16E-04	3,62E-04	8,22E-05	1,00E-04	1,15	0,470786	>0,999999	n.s.
H4c1	Histone H4 OS=Mus musculus OX=10090 GN=H4c1 PE=1 SV=2	P62806	5,05E-04	3,86E-04	1,05E-04	9,70E-05	2,71E-04	3,44E-04	8,73E-04	8,51E-04	1,03E-03	9,57E-04	3,59E-04	2,73E-04	7,36E-04	1,59E-04	2,79E-04	2,70	0,015241	0,878044	n.s.
Krt80	Keratin type II cytoskeletal 80 OS=Mus musculus OX=10090 GN=Krt80 PE=1 SV=1	Q0VBK2	3,25E-04	1,27E-04	3,02E-04	2,87E-04	1,74E-04	2,22E-04	2,64E-04	1,37E-04	2,59E-04	3,28E-04	3,54E-04	2,43E-04	2,61E-04	7,78E-05	7,06E-05	1,07	0,729952	>0,999999	n.s.
Krtap15-1	Keratin-associated protein 15-1 OS=Mus musculus OX=10090 GN=Krtap15-1 PE=2 SV=1	Q9QZU5	1,05E-03	2,36E-04	1,61E-04	1,76E-05	1,42E-04	1,59E-04	1,49E-03	1,32E-03	1,20E-03	1,61E-03	4,45E-04	3,12E-04	9,55E-04	3,77E-04	4,75E-04	3,06	0,053266	0,99794	n.s.
Krtap8-1	Keratin-associated protein 8-1 OS=Mus musculus OX=10090 GN=Krtap8-1 PE=2 SV=2	O08633	3,24E-04	4,99E-05	1,05E-04	7,97E-06	4,73E-05	9,52E-06	2,54E-04	1,76E-04	3,59E-04	4,37E-04	1,57E-04	1,07E-04	2,32E-04	1,13E-04	1,40E-04	2,18	0,178265	>0,999999	n.s.
Hist1h2bp	Histone H2B type 1-P OS=Mus musculus OX=10090 GN=Hist1h2bp PE=1 SV=3	Q8CGP2	7,75E-04	7,65E-04	2,02E-04	1,18E-04	3,26E-04	8,32E-04	1,72E-03	2,12E-03	1,92E-03	2,35E-03	8,12E-04	4,37E-04	1,63E-03	2,80E-04	6,00E-04	3,72	0,005006	0,531272	n.s.
1110025L11Rik	Glycine tyrosine-rich hair keratin protein OS=Mus musculus OX=10090 GN=1110025L11Rik PE=2 SV	O09048	3,56E-04	1,22E-04	2,00E-04	4,46E-05	3,84E-05	9,20E-05	3,47E-04	3,84E-04	2,85E-04	4,83E-04	1,40E-04	1,52E-04	2,89E-04	1,18E-04	1,36E-04	1,90	0,146236	>0,999999	n.s.
Txn	Thioredoxin OS=Mus musculus OX=10090 GN=Txn PE=1 SV=3	P10639	3,19E-04	3,77E-04	3,57E-04	4,21E-04	2,65E-04	5,24E-04	6,06E-04	4,59E-04	4,80E-04	6,68E-04	4,86E-04	3,48E-04	5,37E-04	5,29E-05	7,54E-05	1,54	0,002044	0,274754	n.s.
Sprr1b	Cornifin-B OS=Mus musculus OX=10090 GN=Sprr1b PE=2 SV=1	Q62267	3,94E-04	4,56E-04	6,11E-04	6,69E-04	5,26E-04	6,45E-04	7,72E-04	5,14E-04	5,32E-04	4,98E-04	5,76E-04	5,31E-04	5,90E-04	9,99E-05	9,48E-05	1,11	0,393351	>0,999999	n.s.
Rptn	Repetin OS=Mus musculus OX=10090 GN=Rptn PE=2 SV=2	P97347	1,45E-04	1,23E-04	9,71E-05	1,32E-04	1,03E-04	1,85E-04	1,15E-04	1,31E-04	1,61E-04	1,58E-04	1,33E-04	1,20E-04	1,47E-04	1,80E-05	2,33E-05	1,23	0,084911	0,99986	n.s.
Gm11565	Predicted gene 11565 OS=Mus musculus OX=10090 GN=Gm11565 PE=4 SV=1	A2A4M7	2,42E-04	1,45E-04	1,98E-05	1,19E-05	1,83E-04	1,41E-04	4,00E-04	3,94E-04	3,73E-04	5,86E-04	3,03E-04	1,20E-04	3,66E-04	9,08E-05	1,32E-04	3,04	0,011088	0,796991	n.s.
S100a14	Protein S100-A14 OS=Mus musculus OX=10090 GN=S100a14 PE=1 SV=1	Q9D2Q8	2,13E-04	2,43E-04	2,99E-04	3,13E-04	2,26E-04	6,60E-05	3,45E-04	4,33E-04	3,41E-04	4,52E-05	3,67E-05	2,59E-04	2,11E-04	4,00E-05	1,65E-04	0,82	0,582061	>0,999999	n.s.
Hspb1	Heat shock protein beta-1 OS=Mus musculus OX=10090 GN=Hspb1 PE=1 SV=3	P14602	5,90E-05	4,23E-05	9,81E-06	2,74E-05	3,04E-05	1,87E-04	3,98E-04	3,43E-04	3,16E-04	4,87E-04	1,73E-04	3,38E-05	3,17E-04	1,64E-05	1,11E-04	9,40	0,000623	0,09659	n.s.
Krt23	Keratin type I cytoskeletal 23 OS=Mus musculus OX=10090 GN=Krt23 PE=1 SV=1	Q99PS0	4,89E-07	5,74E-07	1,12E-07	0,00E+00	5,85E-07	1,25E-06	3,35E-07	3,91E-07	3,88E-07	5,06E-07	3,21E-07	3,52E-07	5,32E-07	2,47E-07	3,26E-07	1,51	0,383055	>0,999999	n.s.
Gapdh	Glyceraldehyde-3-phosphate dehydrogenase OS=Mus musculus OX=10090 GN=Gapdh PE=1 SV=1	A0A0A0MQF6	2,35E-04	1,22E-04	2,88E-04	4,12E-04	2,40E-04	1,22E-04	2,27E-04	1,77E-04	2,25E-04	3,05E-04	3,06E-04	2,59E-04	2,27E-04	9,38E-05	6,55E-05	0,88	0,558509	>0,999999	n.s.
Krtap31-1	Keratin-associated protein 31-1 OS=Mus musculus OX=10090 GN=Krtap31-1 PE=2 SV=1	Q9D644	1,02E-04	1,62E-05	4,19E-07	1,67E-06	1,44E-05	2,20E-05	6,81E-05	1,01E-04	9,93E-05	1,30E-04	7,51E-05	2,69E-05	8,27E-05	3,79E-05	3,38E-05	3,08	0,045064	0,995246	n.s.
Eef2	Elongation factor 2 OS=Mus musculus OX=10090 GN=Eef2 PE=1 SV=2	P58252	6,44E-05	1,01E-04	4,08E-05	9,32E-06	2,78E-06	3,48E-04	6,92E-04	5,38E-04	5,08E-04	6,53E-04	3,43E-04	4,36E-05	5,14E-04	3,62E-05	1,34E-04	11,78	0,000073	0,012607	*
Selenbp1	Methanethiol oxidase OS=Mus musculus OX=10090 GN=Selenbp1 PE=1 SV=2	P17563	2,04E-04	8,13E-05	2,04E-05	0,00E+00	5,43E-05	5,16E-05	6,70E-04	5,18E-04	3,95E-04	5,00E-04	2,08E-04	7,20E-05	3,90E-04	7,16E-05	2,06E-04	5,42	0,015443	0,879557	n.s.
Csta	Cystatin-A OS=Mus musculus OX=10090 GN=Csta PE=3 SV=1	P56567	3,36E-04	3,15E-04	2,33E-04	3,23E-04	3,08E-04	4,03E-04	3,36E-04	3,21E-04	2,57E-04	3,42E-04	3,01E-04	3,03E-04	3,27E-04	3,62E-05	4,40E-05	1,08	0,407989	>0,999999	n.s.
Krtap16-1	Keratin-associated protein 16-1 OS=Mus musculus OX=10090 GN=Krtap16-1 PE=3 SV=1	A2A5X5	8,22E-05	7,04E-05	1,34E-04	6,92E-05	8,55E-05	2,41E-04	6,34E-04	6,99E-04	3,85E-04	4,37E-04	2,96E-04	8,83E-05	4,49E-04	2,38E-05	1,67E-04	5,08	0,001919	0,263238	n.s.
Prss3	Protease serine 3 OS=Mus musculus OX=10090 GN=Prss3 PE=1 SV=1	Q792Z0	1,10E-02	8,81E-04	5,90E-03	2,40E-03	5,85E-03	5,16E-03	5,40E-03	2,56E-03	3,49E-03	1,96E-03	9,39E-03	5,20E-03	4,66E-03	3,49E-03	2,46E-03	0,90	0,790005	>0,999999	n.s.
Vcp	Transitional endoplasmic reticulum ATPase OS=Mus musculus OX=10090 GN=Vcp PE=1 SV=4	Q01853	4,10E-05	3,99E-05	3,50E-05	3,45E-05	3,78E-05	1,04E-04	1,38E-04	1,70E-04	1,44E-04	1,76E-04	1,27E-04	3,76E-05	1,43E-04	2,60E-06	2,46E-05	3,80	0,000012	0,002065	**
Krtap11-1	Keratin-associated protein 11-1 OS=Mus musculus OX=10090 GN=Krtap11-1 PE=1 SV=1	E9Q2E9	1,99E-04	9,91E-05	5,04E-05	3,13E-05	1,67E-04	7,84E-05	4,11E-04	3,33E-04	3,10E-04	4,19E-04	2,00E-04	1,09E-04	2,92E-04	6,48E-05	1,20E-04	2,67	0,022135	0,944287	n.s.
Sfn	14-3-3 protein sigma OS=Mus musculus OX=10090 GN=Sfn PE=1 SV=2	O70456	5,24E-05	3,50E-05	1,08E-05	1,14E-05	2,72E-05	1,93E-04	5,63E-04	4,87E-04	3,25E-04	5,24E-04	2,99E-04	2,74E-05	3,98E-04	1,56E-05	1,34E-04	14,55	0,000352	0,056784	n.s.
Anxa1	Annexin A1 OS=Mus musculus OX=10090 GN=Anxa1 PE=1 SV=2	P10107	1,78E-04	5,76E-05	1,68E-04	1,01E-04	1,04E-04	8,95E-05	6,38E-05	8,70E-05	1,59E-04	1,20E-04	5,33E-05	1,22E-04	9,54E-05	4,53E-05	3,55E-05	0,78	0,353088	>0,999999	n.s.
Sprr2h	Small proline-rich protein 2H OS=Mus musculus OX=10090 GN=Sprr2h PE=2 SV=1	O70559	3,94E-04	6,62E-04	1,97E-04	4,27E-04	3,31E-04	1,34E-03	3,91E-04	6,44E-04	2,75E-04	4,52E-04	3,37E-04	4,02E-04	5,73E-04	1,52E-04	3,62E-04	1,42	0,395425	>0,999999	n.s.
Ubc	Polyubiquitin-C OS=Mus musculus OX=10090 GN=Ubc PE=1 SV=2	P0CG50	1,54E-05	6,99E-05	2,99E-06	6,86E-06	2,05E-05	2,76E-05	2,64E-04	1,94E-04	1,81E-04	1,45E-04	7,22E-05	2,31E-05	1,48E-04	2,42E-05	7,86E-05	6,37	0,013091	0,839844	n.s.
Krtap7-1	Keratin-associated protein 7-1 OS=Mus musculus OX=10090 GN=Krtap7-1 PE=3 SV=1	Q9D3I6	2,03E-03	7,87E-04	5,88E-04	3,91E-04	7,22E-04	6,77E-04	3,08E-03	2,30E-03	2,22E-03	2,47E-03	1,31E-03	9,03E-04	2,01E-03	5,78E-04	7,89E-04	2,22	0,043205	0,994382	n.s.
Gm11595	Predicted gene 11595 OS=Mus musculus OX=10090 GN=Gm11595 PE=4 SV=1	B1AQA7	1,20E-04	2,77E-04	7,96E-05	8,09E-05	3,02E-04	2,11E-04	4,68E-04	3,78E-04	4,96E-04	6,94E-04	2,97E-04	1,72E-04	4,24E-04	9,76E-05	1,55E-04	2,46	0,018869	0,91754	n.s.
Nccrp1	F-box only protein 50 OS=Mus musculus OX=10090 GN=Nccrp1 PE=1 SV=2	G3X9C2	7,24E-05	2,47E-04	2,77E-04	2,48E-04	5,88E-05	6,84E-05	2,47E-04	2,69E-04	3,02E-04	4,83E-04	3,35E-04	1,80E-04	2,84E-04	9,45E-05	1,23E-04	1,57	0,197185	>0,999999	n.s.
Lgals7	Galectin OS=Mus musculus OX=10090 GN=Lgals7 PE=1 SV=1	Q9CRB1	5,68E-05	8,02E-05	3,74E-05	4,75E-05	5,30E-05	1,44E-04	1,68E-04	2,04E-04	1,96E-04	1,77E-04	9,90E-05	5,50E-05	1,65E-04	1,42E-05	3,52E-05	3,00	0,000225	0,037277	*
Blmh	Bleomycin hydrolase OS=Mus musculus OX=10090 GN=Blmh PE=1 SV=1	Q8R016	1,84E-04	1,83E-04	1,43E-04	1,09E-04	1,12E-04	2,57E-04	2,13E-04	2,26E-04	1,88E-04	2,32E-04	1,63E-04	1,46E-04	2,13E-04	3,25E-05	3,05E-05	1,46	0,011323	0,801512	n.s.
Adh6a	Alcohol dehydrogenase 6A (class V) OS=Mus musculus OX=10090 GN=Adh6a PE=1 SV=1	E9Q4Y1	2,10E-04	4,49E-06	4,95E-05	2,43E-05	8,99E-05	1,46E-04	3,27E-04	2,45E-04	5,16E-05	7,74E-05	7,32E-05	7,57E-05	1,53E-04	7,31E-05	1,01E-04	2,03	0,226006	>0,999999	n.s.
Krtap14	Keratin-associated protein 14 OS=Mus musculus OX=10090 GN=Krtap14 PE=4 SV=1	J3QNN7	2,18E-04	3,12E-05	2,44E-05	8,00E-07	1,14E-05	2,54E-05	2,39E-04	2,16E-04	2,67E-04	2,39E-04	1,13E-04	5,72E-05	1,83E-04	8,11E-05	8,58E-05	3,21	0,050976	0,997432	n.s.
Krtap21-1	Keratin-associated protein 21-1 OS=Mus musculus OX=10090 GN=Krtap21-1 PE=2 SV=2	Q925H4	1,40E-06	3,32E-06	0,00E+00	0,00E+00	7,01E-06	0,00E+00	4,73E-05	6,19E-05	5,30E-05	1,21E-04	8,50E-06	2,35E-06	4,86E-05	2,63E-06	3,95E-05	20,70	0,042679	0,994382	n.s.
Tchh	Trichohyalin OS=Mus musculus OX=10090 GN=Tchh PE=4 SV=1	A0A0B4J1F9	2,08E-05	4,21E-06	1,94E-06	1,42E-05	2,01E-06	8,52E-06	1,76E-04	1,63E-04	2,44E-04	1,67E-04	2,30E-05	8,62E-06	1,30E-04	7,57E-06	8,53E-05	15,11	0,018462	0,914542	n.s.
Hal	Histidine ammonia-lyase OS=Mus musculus OX=10090 GN=Hal PE=1 SV=1	P35492	3,77E-04	5,50E-05	1,95E-04	2,20E-04	1,70E-04	1,03E-04	1,08E-04	5,55E-05	1,39E-04	2,82E-04	1,62E-04	2,03E-04	1,42E-04	1,04E-04	7,10E-05	0,70	0,31761	>0,999999	n.s.
Eef1a1	Elongation factor 1-alpha 1 OS=Mus musculus OX=10090 GN=Eef1a1 PE=1 SV=3	P10126	7,25E-05	3,76E-05	8,57E-06	1,29E-05	5,49E-05	2,00E-04	3,86E-04	5,00E-04	3,21E-04	2,54E-04	1,69E-04	3,73E-05	3,05E-04	2,44E-05	1,13E-04	8,17	0,001134	0,166995	n.s.
Krtap4-6	Keratin-associated protein 4-6 OS=Mus musculus OX=10090 GN=Krtap4-6 PE=1 SV=1	Q3V4B7	4,26E-05	1,15E-04	1,80E-05	2,10E-05	9,81E-05	5,94E-05	1,85E-04	2,39E-04	2,38E-04	2,94E-04	1,10E-04	5,90E-05	1,88E-04	4,02E-05	8,05E-05	3,18	0,016523	0,892744	n.s.
Hspa5	Endoplasmic reticulum chaperone BiP OS=Mus musculus OX=10090 GN=Hspa5 PE=1 SV=3	P20029	1,50E-06	2,37E-07	2,31E-06	0,00E+00	0,00E+00	6,65E-05	1,04E-04	1,25E-04	6,39E-05	9,76E-05	3,05E-05	8,11E-07	8,12E-05	9,36E-07	3,11E-05	100,12	0,000539	0,08462	n.s.
Hspa8	Heat shock cognate 71 kDa protein OS=Mus musculus OX=10090 GN=Hspa8 PE=1 SV=1	Q504P4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,42E-05	9,30E-06	3,62E-05	3,85E-05	9,30E-06	0,00E+00	2,12E-05	0,00E+00	1,54E-05	#DIV/0!	0,021122	0,937671	n.s.
Pkp1	Plakophilin-1 OS=Mus musculus OX=10090 GN=Pkp1 PE=1 SV=1	P97350	1,82E-05	1,01E-06	8,88E-06	3,62E-05	8,26E-06	1,16E-06	6,29E-06	2,17E-06	5,52E-05	6,25E-05	2,91E-05	1,45E-05	2,61E-05	1,21E-05	2,51E-05	1,80	0,415627	>0,999999	n.s.
Lap3	Cytosol aminopeptidase OS=Mus musculus OX=10090 GN=Lap3 PE=1 SV=3	Q9CPY7	3,43E-07	1,83E-06	5,11E-06	7,87E-07	0,00E+00	2,03E-05	9,69E-05	1,19E-04	1,21E-04	1,62E-04	6,29E-05	1,61E-06	9,71E-05	1,85E-06	4,55E-05	60,23	0,002131	0,280053	n.s.
Rplp2	60S acidic ribosomal protein P2 OS=Mus musculus OX=10090 GN=Rplp2 PE=1 SV=3	P99027	8,14E-06	7,42E-06	0,00E+00	1,63E-06	7,33E-07	5,69E-05	1,64E-04	1,85E-04	1,31E-04	1,45E-04	7,75E-05	3,58E-06	1,27E-04	3,47E-06	4,55E-05	35,32	0,000405	0,064717	n.s.
2310079G19Rik	RIKEN cDNA 2310079G19 gene OS=Mus musculus OX=10090 GN=2310079G19Rik PE=1 SV=1	Q9D6L6	1,90E-04	8,79E-06	2,62E-05	6,84E-05	4,53E-05	8,64E-05	8,06E-05	3,24E-05	8,54E-06	5,43E-05	3,11E-05	6,77E-05	4,89E-05	6,42E-05	2,79E-05	0,72	0,571665	>0,999999	n.s.
Serpinb3a	Serine (or cysteine) peptidase inhibitor clade B (ovalbumin) member 3A OS=Mus musculus OX=10	G3X9V8	7,90E-05	2,99E-05	4,32E-05	7,07E-05	5,85E-05	1,00E-04	6,89E-05	1,11E-04	1,43E-04	1,25E-04	1,48E-04	5,63E-05	1,16E-04	1,79E-05	2,69E-05	2,06	0,003951	0,452139	n.s.
Ywhaz	14-3-3 protein zeta/delta OS=Mus musculus OX=10090 GN=Ywhaz PE=1 SV=1	P63101	3,38E-05	5,28E-06	5,72E-06	5,11E-06	0,00E+00	1,98E-05	3,68E-05	2,88E-05	8,29E-05	1,06E-04	4,56E-05	9,98E-06	5,33E-05	1,21E-05	3,09E-05	5,34	0,025386	0,958766	n.s.
Calm4	Calmodulin-4 OS=Mus musculus OX=10090 GN=Calm4 PE=2 SV=2	Q9JM83	1,40E-05	8,03E-06	1,35E-05	1,18E-05	1,03E-05	2,25E-05	1,48E-05	1,77E-05	2,42E-05	3,48E-05	1,41E-05	1,15E-05	2,14E-05	2,19E-06	7,07E-06	1,85	0,024062	0,95362	n.s.
Coro1c	Coronin-1C OS=Mus musculus OX=10090 GN=Coro1c PE=1 SV=2	Q9WUM4	1,54E-05	2,40E-05	1,91E-05	4,58E-05	1,21E-05	2,88E-05	4,95E-05	1,85E-05	2,40E-05	2,11E-05	2,05E-05	2,33E-05	2,71E-05	1,19E-05	1,06E-05	1,16	0,625683	>0,999999	n.s.
Lrrc15	Leucine-rich repeat-containing protein 15 OS=Mus musculus OX=10090 GN=Lrrc15 PE=2 SV=1	Q80X72	1,52E-05	1,10E-05	2,05E-06	0,00E+00	1,67E-05	3,61E-06	1,51E-05	1,36E-05	2,50E-05	7,36E-05	1,14E-05	8,98E-06	2,37E-05	6,78E-06	2,32E-05	2,64	0,245745	>0,999999	n.s.
Gsdma	Gasdermin-A OS=Mus musculus OX=10090 GN=Gsdma PE=2 SV=1	Q9EST1	1,91E-04	9,55E-05	1,31E-04	1,61E-04	8,62E-05	1,47E-04	1,49E-04	1,59E-04	1,56E-04	1,71E-04	1,47E-04	1,33E-04	1,55E-04	3,95E-05	8,65E-06	1,16	0,261183	>0,999999	n.s.
Alox12b	Arachidonate 12-lipoxygenase 12R-type OS=Mus musculus OX=10090 GN=Alox12b PE=1 SV=1	O70582	5,57E-05	2,15E-05	8,71E-05	1,03E-04	5,52E-05	5,02E-06	5,48E-05	2,76E-05	5,33E-05	5,03E-05	5,50E-05	6,46E-05	4,10E-05	2,84E-05	1,87E-05	0,63	0,170421	>0,999999	n.s.
Prdx2	Peroxiredoxin-2 OS=Mus musculus OX=10090 GN=Prdx2 PE=1 SV=3	Q61171	8,27E-05	3,22E-05	1,32E-04	1,81E-04	4,70E-05	1,15E-04	1,41E-04	1,40E-04	1,53E-04	2,64E-04	1,83E-04	9,50E-05	1,66E-04	5,51E-05	4,82E-05	1,75	0,069297	0,999469	n.s.
Alb	Albumin OS=Mus musculus OX=10090 GN=Alb PE=1 SV=3	P07724	2,68E-05	3,92E-06	2,28E-06	9,27E-06	1,85E-05	6,87E-07	1,61E-06	0,00E+00	3,14E-04	8,08E-06	1,44E-05	1,21E-05	5,64E-05	9,24E-06	1,15E-04	4,64	0,458053	>0,999999	n.s.
S100a16	Protein S100-A16 OS=Mus musculus OX=10090 GN=S100a16 PE=1 SV=1	Q9D708	1,09E-04	1,06E-04	1,18E-04	1,78E-04	1,07E-04	9,73E-05	9,60E-05	1,06E-04	8,70E-05	1,02E-04	9,95E-05	1,24E-04	9,80E-05	2,76E-05	5,92E-06	0,79	0,075479	0,999691	n.s.
S100a11	Protein S100-A11 OS=Mus musculus OX=10090 GN=S100a11 PE=1 SV=1	P50543	8,08E-05	1,19E-04	1,30E-04	9,94E-05	8,59E-05	1,82E-04	1,36E-04	1,58E-04	1,58E-04	1,39E-04	1,31E-04	1,03E-04	1,51E-04	1,90E-05	1,74E-05	1,46	0,003466	0,412084	n.s.
Ece1	Endothelin-converting enzyme 1 OS=Mus musculus OX=10090 GN=Ece1 PE=1 SV=1	Q4PZA2	1,87E-04	3,16E-05	6,48E-04	1,00E-03	7,24E-04	1,05E-05	4,67E-04	1,50E-04	1,05E-04	5,98E-04	3,27E-04	5,19E-04	2,76E-04	3,58E-04	2,07E-04	0,53	0,237363	>0,999999	n.s.
Pof1b	Protein POF1B OS=Mus musculus OX=10090 GN=Pof1b PE=2 SV=3	Q8K4L4	1,89E-05	1,86E-05	2,85E-05	1,48E-05	6,22E-06	6,45E-05	3,47E-05	3,07E-05	6,39E-05	7,65E-05	6,48E-05	1,74E-05	5,59E-05	7,18E-06	1,70E-05	3,21	0,002063	0,275454	n.s.
Aloxe3	Hydroperoxide isomerase ALOXE3 OS=Mus musculus OX=10090 GN=Aloxe3 PE=1 SV=2	Q9WV07	1,06E-04	1,85E-04	1,03E-04	7,93E-05	6,15E-05	9,62E-05	1,22E-04	6,46E-05	9,11E-05	9,60E-05	9,44E-05	1,07E-04	9,41E-05	4,22E-05	1,67E-05	0,88	0,54993	>0,999999	n.s.
Mdh2	Malate dehydrogenase mitochondrial OS=Mus musculus OX=10090 GN=Mdh2 PE=1 SV=3	P08249	5,80E-05	2,92E-05	1,75E-05	2,10E-05	1,21E-05	1,01E-04	1,02E-04	1,11E-04	1,16E-04	1,44E-04	6,38E-05	2,75E-05	1,06E-04	1,62E-05	2,38E-05	3,85	0,000299	0,048652	*
Lmnb2	Lamin-B2 OS=Mus musculus OX=10090 GN=Lmnb2 PE=1 SV=2	P21619	1,96E-06	2,06E-06	7,99E-06	1,31E-05	3,47E-06	2,30E-04	2,61E-05	4,51E-07	1,19E-06	7,77E-06	1,09E-05	5,72E-06	4,61E-05	4,30E-06	8,27E-05	8,06	0,349949	>0,999999	n.s.
Thop1	Thimet oligopeptidase OS=Mus musculus OX=10090 GN=Thop1 PE=1 SV=1	A0A0R4IZY0	2,14E-06	4,65E-06	3,82E-05	5,55E-05	5,60E-06	3,61E-06	6,75E-06	1,48E-05	4,81E-05	6,46E-05	5,75E-06	2,12E-05	2,39E-05	2,16E-05	2,37E-05	1,13	0,862514	>0,999999	n.s.
Ppia	Peptidyl-prolyl cis-trans isomerase A OS=Mus musculus OX=10090 GN=Ppia PE=1 SV=2	P17742	9,23E-06	3,04E-05	2,74E-06	8,04E-06	7,62E-06	4,70E-05	3,76E-05	9,17E-05	2,41E-05	1,74E-05	1,03E-05	1,16E-05	3,80E-05	9,67E-06	2,69E-05	3,28	0,091992	0,999914	n.s.
Ecm1	Extracellular matrix protein 1 OS=Mus musculus OX=10090 GN=Ecm1 PE=1 SV=2	Q61508	1,82E-05	9,73E-06	1,54E-05	4,12E-05	2,65E-05	8,16E-06	4,52E-05	2,38E-05	3,73E-05	4,86E-05	4,14E-05	2,22E-05	3,41E-05	1,09E-05	1,40E-05	1,53	0,196006	>0,999999	n.s.
Cstdc5	Cystatin domain-containing 5 OS=Mus musculus OX=10090 GN=Cstdc5 PE=1 SV=1	Q497J0	7,49E-05	2,00E-05	1,24E-05	3,91E-06	1,08E-05	5,86E-05	3,14E-05	6,22E-05	1,60E-04	8,66E-05	4,64E-05	2,44E-05	7,42E-05	2,58E-05	4,18E-05	3,04	0,065306	0,999406	n.s.
Prdx1	Peroxiredoxin-1 OS=Mus musculus OX=10090 GN=Prdx1 PE=1 SV=1	P35700	3,77E-06	1,28E-05	2,28E-05	5,27E-05	2,46E-05	2,49E-05	5,90E-05	8,93E-05	6,81E-05	9,34E-05	9,20E-05	2,33E-05	7,11E-05	1,65E-05	2,43E-05	3,05	0,008161	0,700196	n.s.
Krtap9-5	Keratin-associated protein 9-5 OS=Mus musculus OX=10090 GN=Krtap9-5 PE=4 SV=1	A2A5X3	2,65E-05	1,47E-05	0,00E+00	3,49E-07	1,16E-06	1,20E-05	5,35E-05	1,39E-04	6,57E-05	1,01E-04	5,81E-05	8,54E-06	7,16E-05	1,05E-05	3,98E-05	8,38	0,012469	0,829524	n.s.
Col1a2	Collagen alpha-2(I) chain OS=Mus musculus OX=10090 GN=Col1a2 PE=1 SV=2	Q01149	0,00E+00	0,00E+00	2,09E-06	9,98E-06	1,12E-04	7,60E-07	2,00E-05	3,93E-07	6,10E-06	1,51E-05	9,99E-08	2,49E-05	7,08E-06	4,39E-05	7,81E-06	0,28	0,400873	>0,999999	n.s.
Rps3	40S ribosomal protein S3 OS=Mus musculus OX=10090 GN=Rps3 PE=1 SV=1	P62908	0,00E+00	0,00E+00	0,00E+00	4,72E-06	5,32E-08	1,03E-06	7,00E-05	5,40E-05	1,53E-04	3,15E-04	4,88E-05	9,55E-07	1,07E-04	1,88E-06	1,04E-04	112,20	0,068022	0,999429	n.s.
Sbsn	Suprabasin OS=Mus musculus OX=10090 GN=Sbsn PE=1 SV=1	E9QPB2	1,82E-05	2,17E-05	1,65E-05	1,81E-05	1,41E-05	3,71E-05	2,47E-05	2,72E-05	3,18E-05	3,98E-05	2,54E-05	1,77E-05	3,10E-05	2,50E-06	5,75E-06	1,75	0,001924	0,263238	n.s.
Anxa2	Annexin A2 OS=Mus musculus OX=10090 GN=Anxa2 PE=1 SV=2	P07356	7,80E-06	6,67E-06	9,62E-06	7,81E-06	8,65E-06	1,69E-05	4,23E-06	8,12E-06	1,29E-05	1,01E-06	4,28E-06	8,11E-06	7,91E-06	9,82E-07	5,49E-06	0,98	0,942568	>0,999999	n.s.
Lmna	Prelamin-A/C OS=Mus musculus OX=10090 GN=Lmna PE=1 SV=2	P48678	0,00E+00	4,62E-06	0,00E+00	0,00E+00	0,00E+00	1,24E-05	1,61E-05	1,27E-05	2,17E-05	1,74E-05	1,27E-05	9,24E-07	1,55E-05	1,85E-06	3,39E-06	16,77	0,000026	0,0045	**
Pkm	Pyruvate kinase PKM OS=Mus musculus OX=10090 GN=Pkm PE=1 SV=4	P52480	0,00E+00	0,00E+00	4,36E-08	0,00E+00	0,00E+00	1,55E-05	1,68E-05	1,52E-05	2,49E-05	2,70E-05	1,11E-05	8,71E-09	1,84E-05	1,74E-08	5,64E-06	2112,47	0,000099	0,016855	*
Rpsa	40S ribosomal protein SA OS=Mus musculus OX=10090 GN=Rpsa PE=1 SV=4	P14206	1,75E-07	1,34E-08	0,00E+00	0,00E+00	0,00E+00	9,60E-07	5,92E-06	2,29E-06	6,28E-06	1,11E-05	5,24E-06	3,76E-08	5,30E-06	6,87E-08	3,24E-06	140,92	0,009438	0,744746	n.s.
Actn4	Alpha-actinin-4 OS=Mus musculus OX=10090 GN=Actn4 PE=1 SV=1	P57780	1,25E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,30E-08	1,95E-05	5,87E-06	1,49E-05	9,09E-05	1,52E-05	2,49E-07	2,44E-05	4,99E-07	3,04E-05	97,85	0,142943	0,999999	n.s.
S100a6	Protein S100-A6 OS=Mus musculus OX=10090 GN=S100a6 PE=1 SV=3	P14069	4,23E-05	4,40E-05	4,79E-05	3,80E-05	2,93E-05	7,43E-05	9,60E-05	8,24E-05	1,17E-04	1,38E-04	6,42E-05	4,03E-05	9,52E-05	6,34E-06	2,53E-05	2,36	0,002074	0,275454	n.s.
Ywhae	14-3-3 protein epsilon OS=Mus musculus OX=10090 GN=Ywhae PE=1 SV=1	P62259	1,63E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,87E-05	0,00E+00	6,82E-05	9,24E-05	1,15E-05	3,26E-08	3,68E-05	6,53E-08	3,55E-05	1127,91	0,065758	0,999406	n.s.
Ctsa	Lysosomal protective protein OS=Mus musculus OX=10090 GN=Ctsa PE=1 SV=1	P16675	5,51E-06	3,09E-06	1,07E-05	8,95E-06	4,81E-06	2,00E-06	5,51E-06	3,11E-06	1,08E-05	5,01E-06	5,31E-06	6,62E-06	5,28E-06	2,80E-06	2,76E-06	0,80	0,495713	>0,999999	n.s.
Me1	Malic enzyme OS=Mus musculus OX=10090 GN=Me1 PE=1 SV=1	Q3TQP6	0,00E+00	1,13E-05	7,10E-06	2,01E-05	0,00E+00	0,00E+00	2,79E-05	0,00E+00	1,59E-05	3,16E-05	4,96E-06	7,70E-06	1,34E-05	7,55E-06	1,28E-05	1,74	0,447927	>0,999999	n.s.
Psmb7	Proteasome subunit beta type-7 OS=Mus musculus OX=10090 GN=Psmb7 PE=1 SV=1	P70195	1,35E-04	2,30E-05	1,23E-04	1,10E-04	0,00E+00	8,15E-05	9,04E-05	1,08E-04	6,11E-05	7,07E-05	7,48E-05	7,82E-05	8,12E-05	5,55E-05	1,52E-05	1,04	0,914571	>0,999999	n.s.
Dpp3	Dipeptidyl peptidase 3 OS=Mus musculus OX=10090 GN=Dpp3 PE=1 SV=2	Q99KK7	5,85E-06	3,43E-06	9,20E-06	6,10E-06	5,82E-06	2,62E-05	1,05E-05	9,97E-06	1,23E-05	2,30E-05	1,95E-05	6,08E-06	1,69E-05	1,84E-06	6,32E-06	2,78	0,008601	0,71502	n.s.
Psma2	Proteasome endopeptidase complex (Fragment) OS=Mus musculus OX=10090 GN=Psma2 PE=1 SV=	Q8BKE0	1,77E-05	1,81E-05	1,80E-05	5,80E-07	1,71E-07	3,10E-05	4,33E-05	4,86E-05	2,83E-05	5,11E-05	2,62E-05	1,09E-05	3,81E-05	8,61E-06	9,93E-06	3,49	0,001891	0,261328	n.s.
Serpinb3b	Serine (or cysteine) peptidase inhibitor clade B (ovalbumin) member 3B OS=Mus musculus OX=10	Q9D1Q5	1,13E-05	7,72E-06	1,38E-05	1,11E-05	4,11E-07	1,38E-05	1,32E-05	1,93E-05	2,22E-05	2,04E-05	2,16E-06	8,85E-06	1,52E-05	4,64E-06	6,69E-06	1,71	0,141774	0,999999	n.s.
Dsg4	Desmoglein-4 OS=Mus musculus OX=10090 GN=Dsg4 PE=1 SV=1	Q7TMD7	1,98E-05	5,98E-06	8,29E-06	0,00E+00	2,67E-05	5,30E-06	1,31E-05	9,62E-06	1,95E-05	3,62E-05	8,80E-06	1,21E-05	1,54E-05	9,68E-06	1,03E-05	1,27	0,637988	>0,999999	n.s.
Calhm4	Calcium homeostasis modulator protein 4 OS=Mus musculus OX=10090 GN=Calhm4 PE=2 SV=2	Q8CE93	4,58E-06	1,57E-06	4,09E-07	0,00E+00	0,00E+00	2,05E-06	2,12E-05	1,26E-05	1,30E-05	1,82E-05	1,68E-06	1,31E-06	1,14E-05	1,73E-06	7,39E-06	8,73	0,02389	0,95362	n.s.
Rps2	40S ribosomal protein S2 OS=Mus musculus OX=10090 GN=Rps2 PE=1 SV=3	P25444	0,00E+00	1,37E-05	8,53E-06	3,45E-07	0,00E+00	1,33E-05	1,40E-05	8,66E-06	2,81E-05	4,55E-05	1,71E-07	4,51E-06	1,83E-05	5,63E-06	1,47E-05	4,05	0,107728	0,999978	n.s.
Anxa5	Annexin A5 OS=Mus musculus OX=10090 GN=Anxa5 PE=1 SV=1	P48036	2,45E-05	3,23E-07	7,62E-05	7,28E-05	1,30E-05	8,48E-07	2,41E-06	4,20E-07	5,14E-05	1,12E-04	4,47E-05	3,74E-05	3,53E-05	3,13E-05	4,03E-05	0,95	0,934298	>0,999999	n.s.
Dusp14	Dual specificity protein phosphatase 14 OS=Mus musculus OX=10090 GN=Dusp14 PE=2 SV=2	Q9JLY7	5,97E-06	7,29E-07	3,53E-07	6,24E-06	1,30E-07	9,75E-09	6,82E-06	7,36E-06	4,91E-06	6,19E-06	3,07E-06	2,68E-06	4,73E-06	2,80E-06	2,53E-06	1,76	0,280652	>0,999999	n.s.
Rps14	40S ribosomal protein S14 (Fragment) OS=Mus musculus OX=10090 GN=Rps14 PE=1 SV=1	D3YVF4	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,37E-05	7,04E-05	4,05E-05	1,09E-05	0,00E+00	0,00E+00	3,26E-05	0,00E+00	3,10E-05	#DIV/0!	0,062639	0,999239	n.s.
Eif2s3x	Eukaryotic translation initiation factor 2 subunit 3 X-linked OS=Mus musculus OX=10090 GN=Eif2s:	A2AAW9	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,60E-05	1,74E-05	3,62E-05	0,00E+00	0,00E+00	1,66E-05	0,00E+00	1,86E-05	#DIV/0!	0,104546	0,999972	n.s.
Anxa7	Annexin A7 OS=Mus musculus OX=10090 GN=Anxa7 PE=1 SV=2	Q07076	9,56E-06	1,71E-05	1,06E-05	1,14E-05	9,56E-06	1,73E-05	9,98E-06	6,46E-06	1,43E-05	2,21E-05	9,56E-06	1,17E-05	1,33E-05	2,82E-06	5,26E-06	1,14	0,585165	>0,999999	n.s.
Rps3a	40S ribosomal protein S3a OS=Mus musculus OX=10090 GN=Rps3a PE=1 SV=3	P97351	9,57E-05	1,33E-06	1,29E-04	1,94E-04	0,00E+00	1,45E-05	7,55E-05	7,01E-05	4,51E-05	5,12E-05	2,19E-05	8,39E-05	4,64E-05	7,50E-05	2,26E-05	0,55	0,318836	>0,999999	n.s.
Hsp90ab1	Heat shock protein HSP 90-beta OS=Mus musculus OX=10090 GN=Hsp90ab1 PE=1 SV=3	P11499	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,79E-06	5,70E-05	7,71E-06	4,90E-05	4,32E-05	5,60E-06	0,00E+00	2,82E-05	0,00E+00	2,19E-05	#DIV/0!	0,028424	0,97034	n.s.
Tpt1	Translationally-controlled tumor protein OS=Mus musculus OX=10090 GN=Tpt1 PE=1 SV=1	P63028	0,00E+00	0,00E+00	0,00E+00	3,00E-06	6,24E-06	2,24E-05	3,27E-05	3,80E-05	1,67E-05	1,87E-05	2,05E-05	1,85E-06	2,48E-05	2,48E-06	7,79E-06	13,43	0,000282	0,046331	*
Pitrm1	Presequence protease mitochondrial OS=Mus musculus OX=10090 GN=Pitrm1 PE=1 SV=1	Q8K411	6,64E-06	0,00E+00	1,79E-05	0,00E+00	0,00E+00	0,00E+00	1,58E-05	1,63E-05	5,29E-06	9,41E-06	3,00E-06	4,90E-06	8,30E-06	6,97E-06	6,16E-06	1,69	0,458856	>0,999999	n.s.
Aox4	Aldehyde oxidase 4 OS=Mus musculus OX=10090 GN=Aox4 PE=1 SV=1	Q3TYQ9	3,05E-05	4,11E-06	1,19E-05	7,84E-06	8,13E-06	5,13E-06	1,81E-05	1,89E-05	2,11E-05	2,18E-05	1,95E-05	1,25E-05	1,74E-05	9,32E-06	5,64E-06	1,39	0,354984	>0,999999	n.s.
Eif5a	Eukaryotic translation initiation factor 5A (Fragment) OS=Mus musculus OX=10090 GN=Eif5a PE=1 S	A0A0A0MQM0	1,99E-05	0,00E+00	1,21E-05	0,00E+00	8,20E-06	7,65E-07	1,12E-04	8,02E-05	7,92E-05	7,38E-05	4,99E-05	8,04E-06	6,60E-05	7,57E-06	3,43E-05	8,20	0,008561	0,71502	n.s.
Glrx	Glutaredoxin-1 OS=Mus musculus OX=10090 GN=Glrx PE=1 SV=1	A0A1Y7VM65	2,60E-06	1,12E-06	5,96E-07	1,48E-05	9,36E-06	3,48E-06	3,91E-06	3,29E-06	1,44E-05	1,70E-05	1,47E-05	5,70E-06	9,47E-06	5,54E-06	5,97E-06	1,66	0,354767	>0,999999	n.s.
Apc	Adenomatous polyposis coli protein OS=Mus musculus OX=10090 GN=Apc PE=1 SV=1	E9QLQ9	3,36E-06	0,00E+00	1,52E-04	3,32E-05	8,01E-07	2,96E-05	1,20E-05	3,29E-04	6,39E-05	1,23E-05	2,01E-05	3,78E-05	7,78E-05	5,83E-05	1,14E-04	2,06	0,536027	>0,999999	n.s.
Gdi2	Rab GDP dissociation inhibitor beta OS=Mus musculus OX=10090 GN=Gdi2 PE=1 SV=1	Q61598	1,94E-07	5,03E-07	3,91E-06	2,99E-05	0,00E+00	0,00E+00	1,79E-06	6,51E-07	9,03E-06	1,05E-05	1,68E-07	6,90E-06	3,70E-06	1,16E-05	4,36E-06	0,54	0,584041	>0,999999	n.s.
Sdr9c7	Short-chain dehydrogenase/reductase family 9C member 7 OS=Mus musculus OX=10090 GN=Sdr9c	Q8K3P0	3,39E-06	2,09E-07	7,30E-06	1,03E-05	5,51E-06	4,25E-07	1,39E-06	1,43E-06	2,68E-06	4,98E-06	3,72E-06	5,34E-06	2,44E-06	3,42E-06	1,55E-06	0,46	0,126296	0,999996	n.s.
Eppk1	Epiplakin OS=Mus musculus OX=10090 GN=Eppk1 PE=1 SV=1	A0A2I3BRT4	5,58E-07	0,00E+00	4,96E-07	0,00E+00	0,00E+00	0,00E+00	1,82E-06	0,00E+00	4,51E-05	4,91E-06	5,84E-06	2,11E-07	9,62E-06	2,59E-07	1,60E-05	45,62	0,265898	>0,999999	n.s.
Krtap24-1	Keratin-associated protein 24-1 OS=Mus musculus OX=10090 GN=Krtap24-1 PE=4 SV=1	G3X9A2	1,20E-06	5,76E-06	0,00E+00	0,00E+00	0,00E+00	5,91E-07	4,07E-05	3,75E-05	2,15E-05	3,22E-05	3,46E-06	1,39E-06	2,27E-05	2,23E-06	1,58E-05	16,29	0,024247	0,95362	n.s.
Ppp2r1b	Serine/threonine-protein phosphatase 2A 65 kDa regulatory subunit A beta isoform OS=Mus muscu	H3BIV7	4,44E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,15E-07	0,00E+00	0,00E+00	1,01E-05	8,67E-06	0,00E+00	8,87E-08	3,15E-06	1,77E-07	4,43E-06	35,47	0,196319	>0,999999	n.s.
Tpi1	Triosephosphate isomerase OS=Mus musculus OX=10090 GN=Tpi1 PE=1 SV=1	H7BXC3	0,00E+00	1,47E-06	0,00E+00	0,00E+00	0,00E+00	8,60E-07	2,10E-05	1,13E-05	2,48E-06	5,06E-06	2,65E-06	2,94E-07	7,22E-06	5,87E-07	7,01E-06	24,59	0,077368	0,999729	n.s.
Tspoap1	Peripheral-type benzodiazepine receptor-associated protein 1 OS=Mus musculus OX=10090 GN=Ts	Q7TNF8	5,35E-05	9,01E-06	1,79E-05	0,00E+00	1,10E-05	0,00E+00	3,45E-05	1,14E-05	1,32E-05	2,18E-04	3,73E-06	1,83E-05	4,68E-05	1,85E-05	7,74E-05	2,56	0,484687	>0,999999	n.s.
Hnrnpa3	Heterogeneous nuclear ribonucleoprotein A3 OS=Mus musculus OX=10090 GN=Hnrnpa3 PE=1 SV=	Q8BG05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,00E-06	5,25E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,25E-06	0,00E+00	2,58E-06	#DIV/0!	0,35062	>0,999999	n.s.
F11	Coagulation factor XI OS=Mus musculus OX=10090 GN=F11 PE=2 SV=2	Q91Y47	5,79E-05	3,46E-07	5,25E-05	8,84E-05	1,80E-05	0,00E+00	4,32E-06	1,16E-06	3,45E-05	9,77E-05	5,48E-05	4,34E-05	3,21E-05	3,10E-05	3,55E-05	0,74	0,625742	>0,999999	n.s.

Note: Statistical significance was determined using the Holm-Sidak method, with alpha = 0.05. Each row was analyzed individually, without assuming a consistent standard deviation.