

	Gene Title	Gene Symbol	Primary keratinocytes		
			Average WT	Average KO	Ratio of KO/WT
ATRA downregulated genes	keratin 10	Krt10	458,57	635,6	1,39
	keratin 1	Krt1	9,17	13,35	1,46
	keratin 6b	Krt6b	2738,76	11414,19	4,17
	bullous pemphigoid antigen 1 dystonin	Dst	10421,08	13182,37	1,26
	cadherin 5	Cdh5	4,27	4,27	-1
	corneodesmosin	Cdsn	228,34	2283,69	10
	desmocollin 1a/ 1b	Dsc1	88,51	633,63	7,16
	desmocollin 3a/3b	Dsc3	20826,84	19652,14	-1,06
	desmoglein 1	Dsg1b	327,37	1004,49	3,07
	desmoplakin	Dsp	29572,79	34418,8	1,16
	envoplakin	Evpl	1336,43	869,25	-1,54
	integrin alpha 3	Itga3	14019,54	15210,01	1,08
	integrin alpha 6	Itga6	33692,64	36469,88	1,08
	integrin beta 1	Itgb1	21628,08	22210,94	1,03
	integrin beta4	Itgb4	6374,33	8857,35	1,39
	hyaluronate receptor	Cd44	31035,22	37770,43	1,22
	collagen 16 alpha 1 subunit	Col16a1	223,97	197,84	-1,13
	filaggrin	Flg	182,29	1217,65	6,68
	loricrin	Lor	18,75	836	44,6
	transglutaminase 1	Tgm1	182,12	363,62	2
	hydroxymethylglutaryl-coenzyme A reductase	Hmgcr	1487,52	1187,16	-1,25
	tyrosinase-related protein 1	Tyrp1	160,55	455,29	2,84
	90-kDa heat-shock protein beta	Hsp90b1	39739,03	36280,93	-1,1
	catalase	Cat	6501,78	7602,7	1,17
	semaphorin IV	Sema3f	901,68	612,93	-1,47
	fatty acid synthase	Fasn	4248,12	3326,72	-1,28
	nucleoside diphosphate kinase b	Nme2	55218,42	55240,37	1
	calmodulin	Calm3	1373,99	1227,71	-1,12
	tyrosinase-protein kinase receptor tyro3	LOC100048488 /// Tyro3	352,37	302,11	-1,17
	insulin-like growth factor binding protein 2	Igfbp2	405,76	347,79	-1,17
	small-proline-rich protein IA	Sprr1a	16518,35	31044,42	1,88
	small-proline-rich protein IB	Sprr1b	18371,73	32118,29	1,75
	small-proline-rich protein 3	Sprr3	8,54	92,18	10,79
	sulfotransferase type 2 isoform BI	Sult2b1	644,35	882,58	1,37
	kruppel-like factor 4	Klf4	13274,24	13798,41	1,04
	Jagged JAG1	Jag1	3273,31	5014,12	1,53
	keratin 23	Krt23	83,87	165,4	1,97
	KRTHA1 (keratin, hair, acidic, 1)	Krt31	5,05	5,05	1
	KRTHA4	Krt34	5,22	5,22	1
	KRTHA3A	Krt33a	4,54	4,53	-1
	cystatin a	Csta	770,45	3394,13	4,41
	insulin-like growth factor binding protein 3	Igfbp3	6969,3	1706,58	-4,08
	kallikrein 8	Klk8	2078,77	3580,89	1,72
	serpinb3a	Serpinb3a	5,72	20,07	3,51
	Serpinb3b /// Serpinb3c	Serpinb3b /// Serpinb3c	6,87	7,56	1,1
	wnt5a	Wnt5a	33,49	73,16	2,18
	calgranulin A	S100a8	12,02	42,53	3,54
ATRA upregulated genes	keratin 18	Krt18	1484,46	988,39	-1,5
	keratin 19	Krt19	10,81	6,22	-1,74
	cellular retinoic acid-binding protein II	Crabp2	1154,51	2303,06	1,99
	heparin-binding EGF-like growth factor	Hbegf	4944,61	5369,56	1,09
	interleukin-1 alpha	Il1a	991,04	1236,63	1,25
	interleukin 1 receptor antagonist protein	Igf1	4,88	4,89	1
	interleukin-1 receptor type II	Il1r2	283,92	113,16	-2,51
	calgranulin B	S100a9	823,02	3777,97	4,59
	platelet-derived growth factor A subunit	Pdgfa	1339,19	1570,51	1,17
	keratin 7	Krt7	5,35	5	-1,07
	keratin 15	Krt15	4,02	4,13	1,03
	crebl2	---	4,32	4,36	1,01
	hebp1	Hebp1	441,45	227,36	-1,94
	lgals1	Lgals1	1205,3	1698,1	1,41
	anxa1	Anxa1	63886,67	63004,99	-1,01
	fabp5	EG620603 /// Fabp5	22117,79	33231,76	1,5
	keratin 16	Krt16	13997,18	27235,44	1,95
	keratin 5	Krt5	50433,18	51545,82	1,02