Day 3 **Day 5**

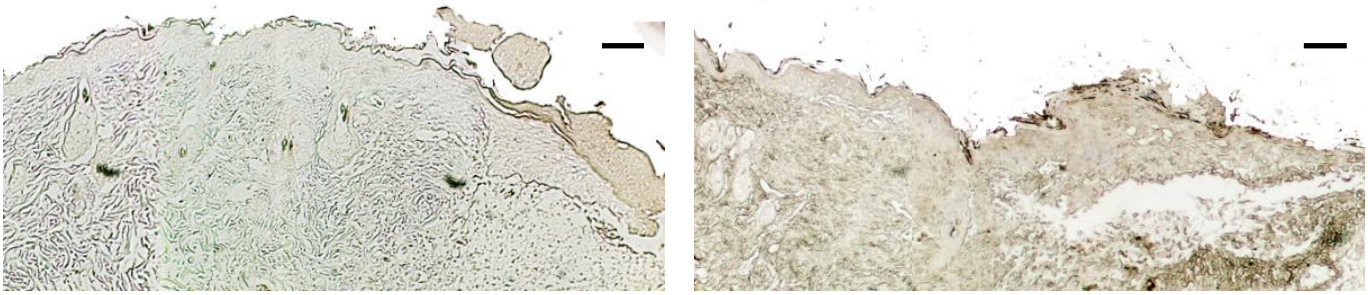


Fig.S1. Negative scramble control sequences used as probe for *in situ* hybridizations. Each panel is a composition of six images taken with an 10X objective to provide high resolution over a wide area. Black bar: 100 µm.

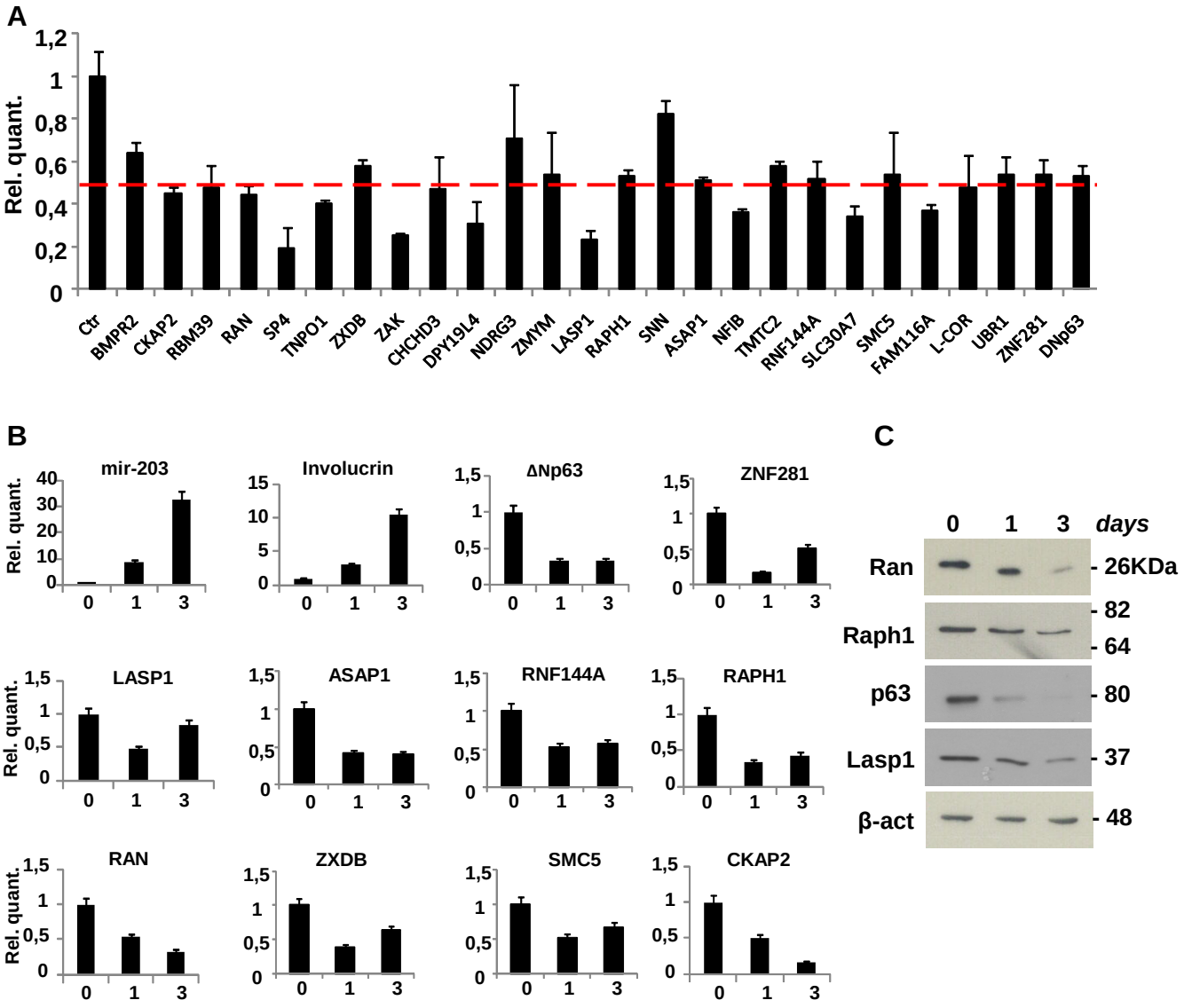
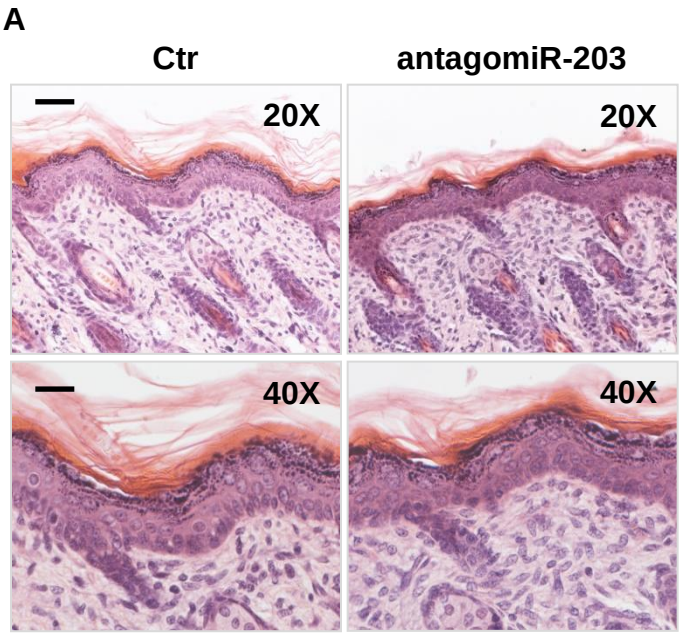


Fig.S2. Overexpression of miR-203 represses a large number of genes in primary keratinocytes. (A) Relative quantification by Real Time RT-qPCR of selected mRNAs presenting at least a miR-203 conserved site in their 3'-UTR; HEKn were collected 48h after transfection of premiR-203 or scramble control sequences. (B) Relative quantification by Real Time RT-qPCR of selected mRNAs at days 0, 1, 3 after *in vitro* differentiation induction by 1,2 mM calcium addiction in primary mouse keratinocytes culture. (C) Western blot analysis of total protein extracts of *in vitro* differentiated primary mouse keratinocytes. β-actin was used as loading control.



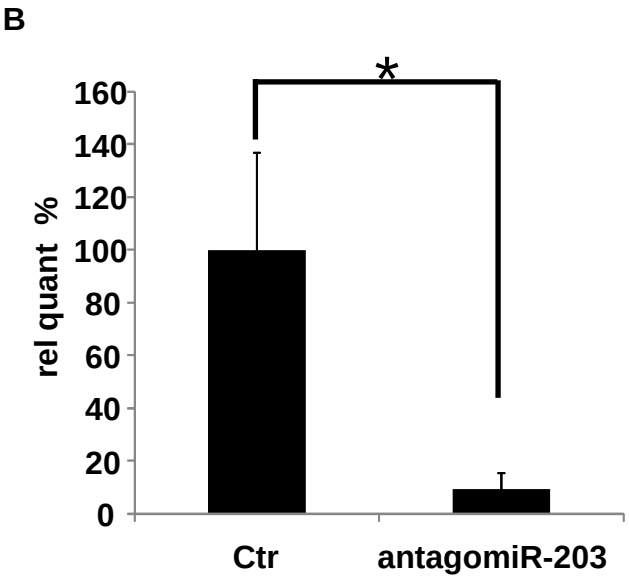


Fig.S3. *In vivo* effects of miR-203 reduction obtained by subcutaneous injection of an antago-miR sequence. (A) H&E staining of backskin sections of antagomiR-203 or scramble control sequence of back side subcutaneously injected mice. Black bar: 250 µm (20X), 125 µm (40X). (B) Relative quantification % of miR-203 expression levels by Real Time RT-qPCR in skin biopses of injected mice. Histogram shows means ± SD of miR-203 relative levels in dorsal skin of 4 mice/group. Control group was set at 100% (*P<0,001). For each mouse miR-203 backskin expression was normalized to its own ventral skin expression.

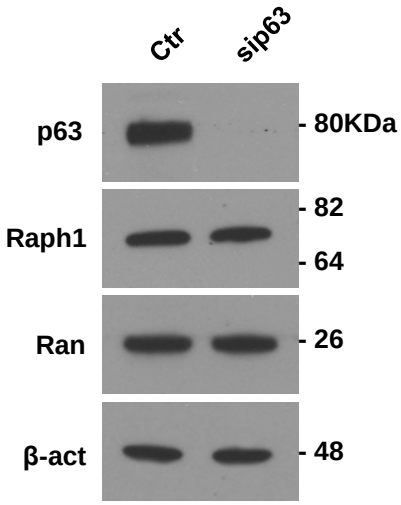


Fig.S4. p63 silencing by siRNA does not influence Raph1 and Ran expression. Western blot analysis of Raph1 and Ran protein levels in HEKn cells 48h post transfection with scramble control or p63 specific siRNA. β-Actin was used as loading control.

Table S1	**List of primers used for real time RT-qPCR**
Primer name	***Sequence***
h-TBP F	TCAAACCCAGAATTGTTCTCCTTAT
h-TBP R	CCTGAATCCCTTTAGAATAGGGTAGA
h-DNp63 F	GAAGAAAGGACAGCAGCATTGAT
h-DNp63 R	GGGACTGGTGGACGAGGAG
h-RAN F	GAAGAAGTATGTAGCCACCTTGGG
h-RAN R	AATAGCCATCTCTCAGTCCACCG
h-CKAP2 F	TCAGCCCAAAGAAACCTCGG
h-CKAP2 R	GGTAGTCCAAAAAGACCCAACTGG
h-ZNF281 F	GAGGACACATAGTGGAGAAAAGCC
h-ZNF281R	TGAGACAACACAGCCAGATTACCC
h-NFIB F	TCCCCAAGACTGAGCACTTTCC,
h-NFIB R	AAATGGCAACGGTGAAGGAGG
h-TNPO1 F	CTGTGAACCTGTGTATCAGCGTTG
h-TNPO1 R	CAATGTTGCCTCCAAGTCCTTC
h-RBM39 F	AAGGAACGGAAGCGAAGTAGAGAC
h-RBM39 R	GATGCTATGAGGCAACCCAATC
h-BMPR2 F	GCTCTTGCCGTCTTGCTCATTC
h-BMPR2 R	CACCAGTCTATTTCCAGTCAGCCTC
h-ZXDB F	GAGGTCTCAAGTGTAAGTGTGGGG
h-ZXDB R	CGCTTTGGTTGGTGTCAGTAGTTC
h-TMTC2 F	GCACTCTTTCTTTTCGCCTGAACC
h-TMTC2 R	TGTCCAGTATCCATCACCAAGGAG
h-SLC30A7 F	TGTTGCCCCTGTCCATCAAAG
h-SLC30A7 R	CCGTAGAGTAGTTCCACAAAAGCG
h-ASAP1 F	GGAAAGTATGGCAGAGGAGGAAG
h-ASAP1 R	TTGGCAGGTGAGAAGGTTCAAC
h-RNF144A F	GATGACAACCATAGCCCAGTGC

h-RNF144A R	TCAATCTCGTTCTCCTGTAGGTGG
h-NDRG3 F	GCTGAAATGCTGCCTCCTGTTC
h-NDRG3 R	TTCCTGCCCAAAGTGATGAGCC
h-FAM116A F	ACAAGCCTGGGACAACTCAAATAG
h-FAM116 R	GCCAATACAGTCTCTGATGATTCCG
h-DPY19L4 F	GGTGACAGTGCCATTTATTACTCC
h-DPY19L4 R	CGGATACAGAGACATTTGCTGC
h-LASP1 F	ATCCCACGGAGAAGGTGAACTG
h-LASP1 R	GCTTGAGGCGAAGGTTTTCC
h-UBR1 F	CATTAATGGAGGAAGAGAGCACCC
h-UBR1 R	GGCAGTAGATTTCTGGACACAGGC
h-CHCHD3 F	GGCGGACGAGAATGAGAACATC
h-CHCHD3 R	GGCACCATAAGCACCAGAATACC
h-LCOR F	ATTATCCAGGGAAGCCTCTTGG
h-LCOR R	GAAAAGGAAGGTCACTGATGTTGC
h-SMC5 F	TTTCGTGGAAGGCTCTATCGTC
h-SMC5 R	CAATGGCACACACAATGCTCG
h-ZMYM4 F	ATGCCCTGAAACTGCCACCTTC
h-ZMYM4 R	CTGACTTGGAGTGTCTTCTGTCTGG
h-RAPH1 F	GGTGCTGAAGAAGACAGTGACAAGG
h-RAPH1 R	GGAGGAAGCGGTAAGAAAAGTTGGC
h-ZAK F	GGTGGAGGAAGTTTTGGGAGTG
h-ZAK R	TGCCATAGTTGGGAGGTTCAAG
h-SP4 F	AGCAGCAGCCTTTACAGAATGTTC
h-SP4 R	CTTGAAGACACTGGGGTGATGG
h-SNN F	ATGGACCACAGCCCCACCACGG
h-SNN R	GGCCGAATACTGCACCAGCAGG
m-actin F	TGTCCCTGTATGCCTCTGGTCG
m-actin R	GAACCGCTCGTTGCCAATAGTG

m-Involucrin F	TCTCCCTCCTGTGAGTTTGTTTGG
m-involucrin R	CAGTGAAGACCTGGCATTGTGTAGG
m-ZNF281 F	TCCTTGGTGAGCATCAAGCAG
m-ZNF281 R	GCCTGGTGATCGCTCTTCAG
m-LASP1 F	ATGCTTTCACTGCGAGACCTGC
m-LASP1 R	GCTTGAGGCGGAGATTTTCC
m-RAN F	GGCAAAATCTATTGTCTTCCACCG
m-RAN R	AGGTCATCATCCTCATCTGGGAG
m-RAPH1 F	GCCAACTTTTCTTACCGCTTCTC
m-RAPH1 R	CTATTTCCTGAGCCAATGCTGC
m-RNF144A F	TGTGCCAACTCCAGGACATAGG
m-RNF144A R	CGCCCTCTTCCATCTTGAAAG
m-ZXDB F	TCGTGTCTCTGTTCTCGGATGTGC
m-ZXDB R	CCCCAAGGAATGGTTGTTGC
m-CKAP2 F	TTCCCAGTGTCAAAGGCGAG
m-CKAP2 R	TGCTCACAGGTTTAGCGTCTGC
m-ASAP1 F	ATCTCCCACGCAACTTCCAAC
m-ASAP1 R	TCCTGCTCATCTTCTGCTTGAAAG
m-SMC5 F	CATCCCTGAAAGTAGCCCAGTTC
m-SMC5 R	TGCCTGTTCGTATCACGCAAGG
m-DNp63 F	CCTGGAAGCAGAAAAGAGGAGAGC
m-DNp63 R	TGTGCGTGGTCTGTGTTGTAGG

Table S2	**List of primers used for 3'UTRs cloning**
Primer name	***Sequence***
RAN 3’UTR F	GGCCTCTAGAGAATGAAGCTGGAGCCCAGC
RAN 3’UTR R	GGCCTCTAGAATTCCCAACCTCCTGCCATCC
RAPH1 3’UTR F	CCGGTCTAGACTGGATTGCTCCCTCCCTCAGTTC
RAPH1 3’UTR R	CCGGTCTAGAAAGGATTTGATAAGCTGATATAATG
RAN 3’UTRdel203F	TAGAATCAGAATAAAGTTGTATATCTAAGCAAGTGAACTC
RAN 3’UTRdel203R	GAGTTCACTTGCTTAGATATACAACTTTATTCTGATTCTA
RAPH1 3’UTRdel203F	CTTCTGCATAAATGTATGCTTTATGTGCCTTGCTCCCTGA
RAPH1 3’UTR del203R	TCAGGGAGCAAGGCACATAAAGCATACATTTATGCAGAAG