

Article

Novel approach for skin anti-aging: Boosting pharmacological effects of exogenous nicotinamide adenine dinucleotide by Synergistic Inhibition of CD38 Expression (NAD⁺)

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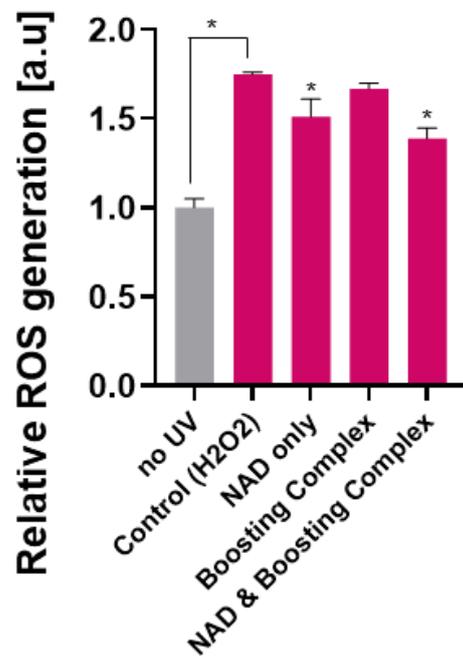
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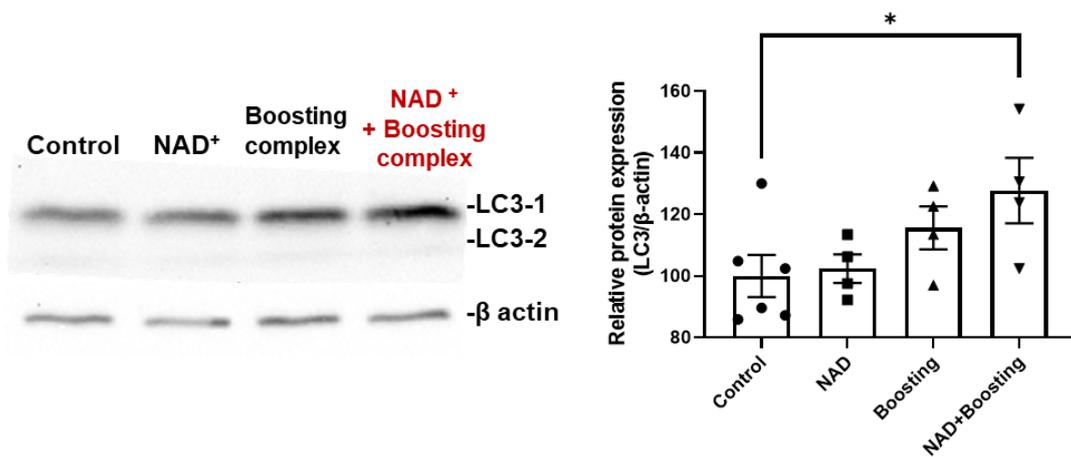
Supplementary material

Genes	Forward (5' - 3')	Reverse (5' - 3')
CD38	TCTTGCCCAGACTGGAGAAAGG	TGGACCACATCACAGGCAGCTT
ULK1	GCAAGGACTCTTCCTGTGACAC	CCACTGCACATCAGGCTGTCTG
ATG5	GCAGATGGACAGTTGCACACAC	GAGGTGTTTCCAACATTGGCTCA
BECN1	CTGGACACTCAGCTCAACGTCA	CTCTAGTGCCAGCTCCTTTAGC
LC3B	GAGAAGCAGCTTCCTGTCTGG	GTGTCCGTTACCAACAGGAAG
P62	TGTGTAGCGTCTGCGAGGGAAA	AGTGTCCGTGTTTCACCTTCCG
TGF- β 1	TACCTGAACCCGTGTGCTCTC	GTTGCTGAGGTATCGCCAGGAA
PDGFB	GAGATGCTGAGTGACCACTCGA	GTCATGTTCAAGTCCAACCTCGG
IL6	AGACAGCCACTCACCTCTTCAG	AGACAGCCACTCACCTCTTCAG
COL3A1	TGGTCTGCAAGGAATGCCGTGA	TCTTCCCTGGGACACCATCAG
ATP5F1A	GCTCCTTACTCTGGCTGTCCA	GCGGAGCAACAGAGACATCTGA
DRP1	CAAAGCAGTTTGCTGTGGA	TCTTGGAGGACTATGGCAGC
PDK4	AACCGTATTCTACTCGGATGCT	ACTCAAAGGCATCTTGGACCAC
OPA1	ACGTCCTTTGTCCAGCCTCT	GGTTAAAGCGCCCGTAACAT
ACTG1	CACCATTGGCAATGAGCGGTTG	AGGTCCTTGGCGATGTCCACGT
ARP2	GGTGTGACTCACATTTGCCAG	TCAGCAGAGTGTTGAAGGCGT
ARP3	TGCCTTAGCTGCATCTTGGACC	CTGCCAATCACATACCCTTCAGC

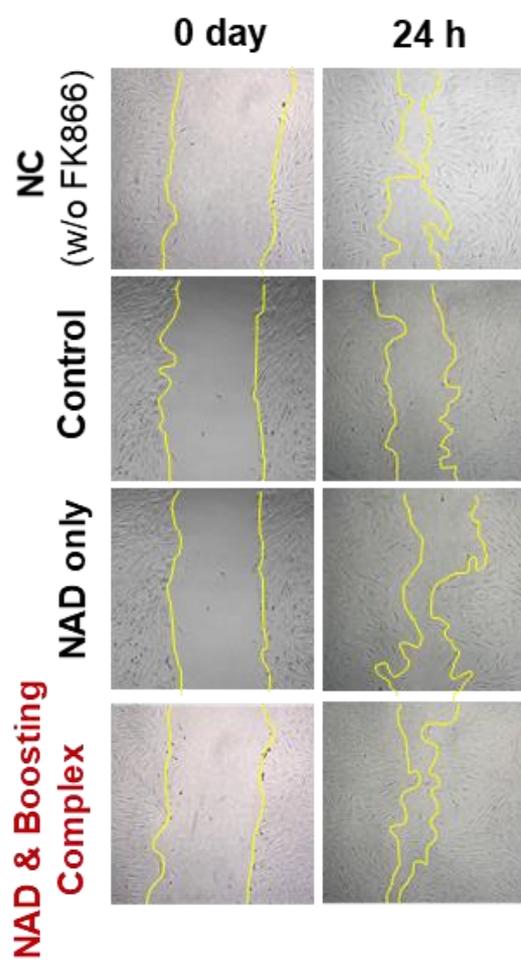
Supplementary Table S1. Primer sequences for RT-qPCR



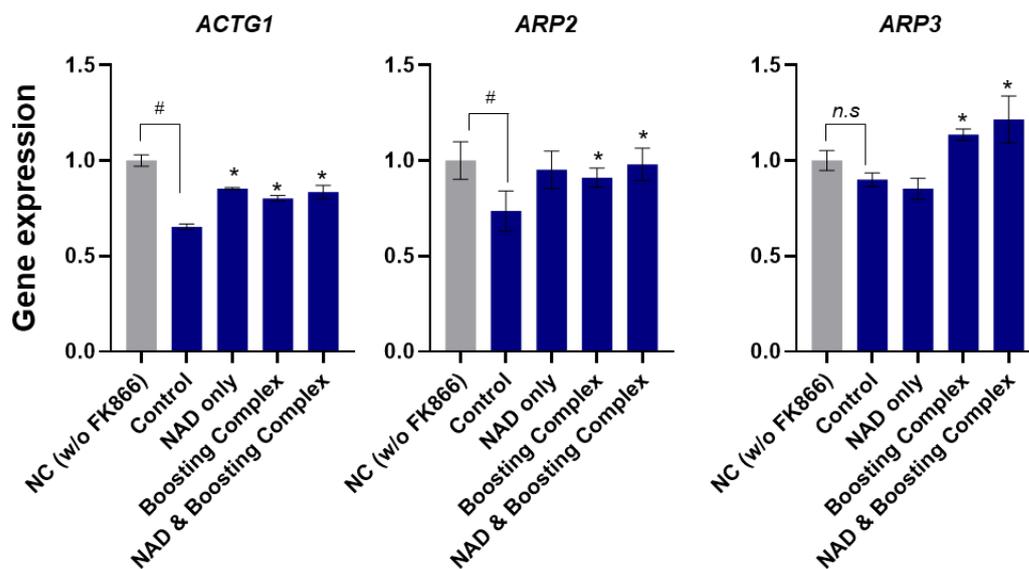
Supplementary Figure S1. Relative reactive oxygen species (ROS) generation. Cellular oxidative stress was estimated using dichlorofluorescein diacetate (DCFDA) assay. All experiments were performed in triplicate. Between negative control (no UV or no H₂O₂) and control group, Student's t-test was performed. One-way ANOVA (Dunnett's test) was performed for comparison between control and experimental groups. * Significantly different results ($p < 0.05$).



Supplementary Figure S2. Western blot analysis for LC3. In quantification, data are presented from independent experiments. Student's t-test was performed (* Significantly different results ($p < 0.05$)).



Supplementary Figure S3. Wound scratch assay. The wound area was measured after 24 h.



Supplementary Figure S4. mRNA expression for ACTG1, ARP2, and ARP3 analyzed by RT-qPCR. All experiments were performed in triplicate. Between negative control and control group, Student's t-test was performed (# Significantly different results ($p < 0.05$)). One-way ANOVA (Dunnnett's test) was performed for comparison between control and experimental groups (* Significantly different results ($p < 0.05$)).

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