

Figure S1. The effects of ultraviolet B (UVB) radiation or dexamethasone (Dex) on the cellular senescence markers in Hs68 cells. The cells were treated with or without 20 mJ/cm² UVB or 1 μM Dex. After treatment for 12 h, **(A)** the p16 mRNA levels were analyzed by quantitative polymerase chain reaction (PCR). Glyceraldehyde 3-phosphate dehydrogenase (*GAPDH*) was used as reference gene for PCR. **(B)** The cells were stained with the Senescence-associated β-galactosidase (SA-β-gal) staining kit. Representative image of SA-β-gal staining. **(C)** Percentage of SA-β-gal-positive cells. The results are expressed as mean ± standard error of mean (SEM) of three independent experiments. **p*<0.05.

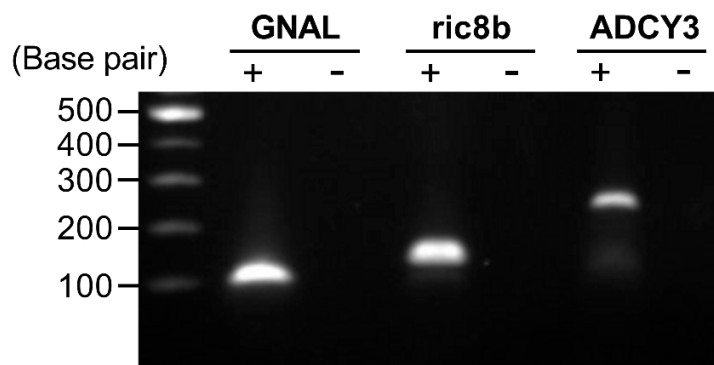


Figure S2. The presence of olfactory signaling pathway components in Hs68 cells. Agarose gel electrophoresis shows (amplification) semi-quantitative polymerase chain reaction (PCR) of olfactory signaling pathway components genes, including G Protein Subunit Alpha L (*GNAL*), *ric8b*, and adenylate cyclase type 3 (*ADCY3*) in Hs68 cells. +, reaction containing reverse transcriptase; –, reaction without reverse transcriptase.

Table S1. Sequences of primers used in this study.

Gene name	Primer sequences (5'→ 3')
p16	F: TGCCCAACGCACCGAATAG R: CCCCTGCAAACCTTCGTCCTC
Collagen type I alpha 1 chain (<i>COL1A1</i>)	F: TTGCTCCCCAGCTGTCTTAT R: AGACCACGAGGACCAGAGG
Olfactory Receptor Family 1 Subfamily C Member 1 (<i>OR1C1</i>)	F: CACGCCCCCTGTCTGTCTGTATCC R: TGGCTGTGCCGTAAAACAAC
<i>OR2AE1</i>	F: TGTGGCAGAAGAATCAGACC R: GAGAATGGTGAGGGTGTTGC
<i>OR2AG2</i>	F: TCTACAGCCTGAGGAATAAGGA R: GGAGGAATGGTGAGAGGCAA
<i>OR2AK2</i>	F: TCTATGCAACCACTCTCTTTACC R: AAATACTGCCACCGCCTTATCC
<i>OR2A1/42</i>	F: GCATGACGCAGACCTTTCTCT R: GCAGTCTTAGGATGAGAACCA
<i>OR2A4/7</i>	F: GACCTCATTCAACCTCACAAATC R: ATTCATTCAGCGGCAAACAC
<i>OR2B6</i>	F: GTTGTCTACCCTGACTCTCCA R: GCCTCATTTGCTGTTGTCTCA
<i>OR2W3</i>	F: ATGGATGGAACCAATGGCAG R: GAGGTACGCGATCAGGATGA
<i>OR7D2</i>	F: TCAGCTACATGGAAGCAGGAA R: GGACGATGCAAGTGCTGAAA
<i>OR10A4</i>	F: CCCTTGCACTACCCAGTCATC R: TCAGAGCCTCCAGTTCAAACA
<i>OR10A5</i>	F: CAAAGGACACGGGCCAAAC R: CAGCAATGCGAGTATAGGAAC
<i>OR10AD1</i>	F: TCCGCAGAGACAACCAACATAG R: GGTGAGAGGCACAAGTAGAGA
<i>OR51B4</i>	F: CTGCTAGACCAGAGGGAGATT R: TGTTCACTACTCGGGAATTGGT
<i>OR51B5</i>	F: AGAAACCAAGAGCCACGACT R: GTGAGGCAACAACCTCAGCAC
<i>OR51I1</i>	F: CCATGCTCAACCTATCATCTA R: GGCCTGGGATTTATGGAAGAA
<i>OR52D1</i>	F: TCTCCCCCTTCATCTTCTTGCT R: GAGCCACAGTTAGCCCATAGA
ATPase Family AAA Domain Containing 3A (<i>ATAD3A</i>)	F: GCTGTTGGGGTCTACTCAGC R: AAGGGACTCAGCCAGGAACT
Aurora Kinase B (<i>AURKB</i>)	F: GGAGTGCTTTGCTATGAGCTGC

Gene name	Primer sequences (5'→ 3')
	R: GAGCAGTTTGGAGATGAGGTCC
Cell Division Cycle 73 (<i>CDC73</i>)	F: GCCTTCCATCTGAAGTATGATGA R: TGTACCTGTCCAATGTTTCCC
Cyclin Dependent Kinase 1 (<i>CDK1</i>)	F: TACAGGTCAAGTGGTAGCCA R: AGCACATCCTGAAGACTGACT
Chromodomain Helicase DNA Binding Protein 8 (<i>CHD8</i>)	F: GGTCACACAAGACCCCATTGA R: AGGGACCAGTTCACCTGCTG
α -Enolase 1 (<i>ENO1</i>)	F: ACGAGACCCAGTGGCTAGAAG R: TGGGCTGTGGGTTCTAAGG
Frataxin (<i>FXN</i>)	F: AAGCCATACACGTTTGAGGACTA R: TTGGCGTCTGCTTGTGATCA
Histone Deacetylase 3 (<i>HDAC3</i>)	F: TTGAAGATGCTGAACCATGC R: TGGCCTGCTGTAGTTCTCCT
Heterogeneous Nuclear Ribonucleoprotein K (<i>HNRNPK</i>)	F: AGACCTGGAGACCGTTAC R: ATAAGCCATCTGCCATTC
Heat Shock Transcription Factor 1 (<i>HSF1</i>)	F: GAACAGCTTCCACGTGTTCTG R: TGGCCATGTTGTTGTGCTTG
Heat Shock Protein Family D (Hsp60) Member 1 (<i>HSPD1</i>)	F: TAGCTGTTACAATGGGGCCA R: GGCAACGTCCTGAACAAGTT
Lysine Demethylase 1A (<i>KDM1A</i>)	F: TGACCGGATGACTTCTCAAGA R: GTTGGAGAGTAGCCTCAAATGTC
Mediator Complex Subunit 1 (<i>MED1</i>)	F: TGATCTTCCTGCGTGTTCCTTC R: ACAACGGGATTCTCTGTGCAA
Mechanistic Target Of Rapamycin Kinase (<i>MTOR</i>)	F: CGCTGTCATCCCTTTATCG R: ATGCTCAAACACCTCCACC
MYC proto-oncogene, bHLH transcription factor (<i>MYC</i>)	F: GCGCCCATTAATACCCTTCTTTC R: CTCTCAAACCCTCTCCCTTTCTC
N-Alpha-Acetyltransferase 15, NatA Auxiliary Subunit (<i>NAA15</i>)	F: GCTTTGCTGTGGGCTTTATC R: ACAAGACTTCCCTGAACCTTACC
Nucleoporin 62 (<i>NUP62</i>)	F: GCCTCGGCTGAAGAAAGAAG R: CTCTGGCTCCCAAAGCAAATC
PCI Domain Containing 2 (<i>PCID2</i>)	F: ATGGTGTGGACACGTCAAAG R: TCAGCACAACCAAAGTGGAAG
3-Phosphoinositide Dependent Protein Kinase 1 (<i>PDPK1</i>)	F: GGCGGAAACCCTTGCTTAAC R: TATCGCTGCCTCCAAACCTC
Prohibitin 2 (<i>PHB2</i>)	F: AGCAGGAACAGCACAGAAGA R: CGGAGCTTGATATAGCCAGGAT
Polo Like Kinase 1 (<i>PLK1</i>)	F: CCAGAGGGAGAAGATGTCCA R: CAACACCACGAACACGAAGT
Protein Kinase, DNA-Activated, Catalytic Subunit (<i>PRKDC</i>)	F: GAACACCATGTCCCAAGAGGAG R: GGCTTGTA CT CATCCTCACG
Protein Tyrosine Phosphatase Non-Receptor Type 1 (<i>PTPN1</i>)	F: GCTGATACCTGCCTCTTGCTGATG R: AGCTGGTCGGCTGTCTGGATC
Ribosomal Protein L10 (<i>RPL10</i>)	F: GATGCCAAGATTGCGATTTTGTG

Gene name	Primer sequences (5'→ 3')
	R: AGCTGCTCATATTCATCTGACA
Ribosomal Protein S27a (<i>RPS27A</i>)	F: CTGGAAGATGGACGTACTTTGTC R: CGACGAAGGCGACTAATTTTGC
Ribosomal Protein S3A (<i>RPS3A</i>)	F: AAATCATGACCCGAGAGGT G R: T TGGGCTTCTTCAGCAT TTT
Ribosomal Protein S6 (<i>RPS6</i>)	F: CTTCAGAGCAATACGCCGCCG R: GCCGCATCCACACAGTCCGT
Splicing Factor Proline And Glutamine Rich (<i>SFPQ</i>)	F: CTGGGAAATGCATCTGGAGG R: GCGTGCTTCCTATATGCCAA
SON DNA And RNA Binding Protein (<i>SON</i>)	F: TGGCCCTGATCATCGCAAAC R: ACATACAATTGGGTCTGGTAAGG
Signal Transducer And Activator Of Transcription 5B (<i>STAT5B</i>)	F: CAGCCTGGACGTGCTACAGT R: TGGTCACCAGGGCTGAGATA
Suv3 Like RNA Helicase (<i>SUPV3L1</i>)	F: GTTGAATTTGGAGGGCTTTCC R: GCTGGGTGGCTCAGTAGCTT
Transferrin Receptor (<i>TFRC</i>)	F: GTCGCTGGTCAGTTCGTGATT R: AGCAGTTGGCTGTTGTACCTCTC
Tumor Protein, Translationally-Controlled 1 (<i>TPT1</i>)	F: TATTGGACTACCGTGAGG R: CAAGCAGAAGCCAGTTATG
TP53 Regulated Inhibitor Of Apoptosis 1 (<i>TRIAP1</i>)	F: GTGGCCTGGATTAGCAAAGAG R: GGTTCCTCCTCCACAGCTATTC
Arrestin Beta 2 (<i>ARRB2</i>)	F: CCCTCAATGTAAATGTCCACG R: GATGTCGGCGTACTGTCTCAC
Bone Morphogenetic Protein 4 (<i>BMP4</i>)	F: CCGCAGCCTAGCAAGAGTG R: GCTCAGGATACTCAAGACCACTG
Chromobox 8 (<i>CBX8</i>)	F: GTGTGTGTATGTGTCTCCTTCTC R: TCACGACCGCAGAAGATAGG
cAMP Responsive Element Binding Protein 3 Like 1 (<i>CREB3L1</i>)	F: GAAGGTGGAGACCCTGGAGAATG R: GAGCCCAGCACCAGAACAAAG
Connective tissue growth factor (<i>CTGF</i>)	F: CTGGGAAGCCATCACTTACCTTGC R: GTTCTAGAGTCGCTGGGAAGCTG
Endoglin (<i>ENG</i>)	F: AGCTGACTCTCCAGGCATCC R: GCAGCTCTGTGGTGTGACC
Coagulation Factor II Thrombin Receptor (<i>F2R</i>)	F: CCCGGGCTCAACATCACTAC R: GCAACTGCGGAAGAGCTAAG
Histone Deacetylase 2 (<i>HDAC2</i>)	F: ATGGCGTACAGTCAAGGAGGC R: AAATCAGAACAGCTCAGCAAC
Platelet Derived Growth Factor Receptor Beta (<i>PDGFRB</i>)	F: GCACTTTTATCCACCCAGGA R: GTACTTGGCTCAGCCTCCAG
Regulator Of Cell Cycle (<i>RGCC</i>)	F: ACTTCCACTACGAGGAGCAC R: TGAATCTGCACTCTCCGAGTC
RUNX Family Transcription Factor 1 (<i>RUNX1</i>)	F: TGAGCTGAGAAATGCTACCGC R: ACTTCGACCGACAAACCTGAG
Transforming Growth Factor Beta 1 (<i>TGFB1</i>)	F: AACGCACTAACTTGACCTACAG

Gene name	Primer sequences (5'→3')
	R: CTCCAGAGTTCAAAGGCATCC
G Protein Subunit Alpha L (<i>GNAL</i>)	F: CAGCAAGACGACGGAAGACC R: CGCTCTTTCTGCAACTGCTTCTC
<i>Ric8b</i>	F: TGTGACGGTAGACAGTTGGAAG R: GCATTGCTGTGTAGCTCTTCTG
Adenylate Cyclase 3 (<i>ADCY3</i>)	F: GCCCAACTTTGCTGACTTCTAC R: GCTCTCTCTCGGACTTGTCTTC
Glyceraldehyde 3-phosphate dehydrogenase (<i>GAPDH</i>)	F: ATCAAGAAGGTGGTGAAGCAG R: GTCGCTGTTGAAGTCAGAGG

Table S2. Sequences of small interfering RNA (siRNA) oligonucleotides used in this study.

Gene name	siRNA sequence (Sense [S], antisense [A])	
<i>OR2AE1</i>	#1	S: CAUUACGCCCACAUUGAAU A: AUUCAAUGUGGGCGUAAUG
	#2	S: CCUCUAUUUGUGUCUAGGU A: ACCUAGACACAAAUAGAGG
<i>OR2AK2</i>	#1	S: CUCUUCUCUUUGUCGUCAU A: AUGACGACAAAGAGAAGAG
	#2	S: CACCAUUGUCACACCUCUA A: UAGAGGUGUGACAAUGGUG
<i>OR2A1/42</i>	#1	S: CUGUCUAUGAUUGUCUCUA A: UAGAGACAAUCAUAGACAG
	#2	S: CCUACCUGCGAAUCAUGGU A: ACCAUGAUUCGCAGGUAGG
<i>OR2A4/7</i>	#1	S: CAUCAUUGAGCGGUUCUUA A: UAAGAACCGCUCAAUGAUG
	#2	S: GAGGAUGAACCUGUCGUGU A: ACACGACAGGUUCAUCCUC
<i>OR10A4</i>	#1	S: CUGAUCAUUCAAGACACAA A: UUGUGUCUUGAAUGAUCAG
	#2	S: CUCUCUCUUCUAUAGCACU A: AGUGCUAUAGAAGAGAGAG
<i>OR10A5</i>	#1	S: GAGCAAGAAGUUGUUAUCA A: UGAUAACAACUUCUUGCUC
	#2	S: CUGAGAGCAAGAAGUUGUU A: AACAAUCUUCUUGCUCUCAG
<i>OR51B4</i>	#1	S: CAUUCAUUCACUGGCCAUU A: AAUGGCCAGUGAAUGAAUG
	#2	S: CUCAGAGGCAGUUCACUAC A: GUAGUGAACUGCCUCUGAG
<i>OR51B5</i>	#1	S: GUAUUGUCACUCCCAUGUU A: AACAUUGGAGUGACAAUAC
	#2	S: CGAGUCUGGCAUUCUGCUU A: AAGCAGAAUGCCAGACUCG

OR51I1	#1	S: CUCAACUUUCAUCCUGCUU A: AAGCAGGAUGAAAGUUGAG
	#2	S: UCAACACCUGCAUGUCACA A: UGUGACAUGCAGGUGUUGA
OR52D1	#1	S: AGAUUCCAACCUCAGUGAU A: AUCACUGAGGUUGGAAUCU
	#2	S: UCUAUGGAGCUAGAACCAA A: UUGGUUCUAGCUCCAUAGA
Non-targeting siRNA		S: GAACUGAUGACAGGGAGGC A: GCCUCCCUGUCAUCAGUUC