

Figure S1. LSKL impaired DNA repair and cell viability in primary retinal neurons. Primary retinal neurons were pretreated with LSKL (24 h) or the control vehicle and exposed to UV irradiation. **(A)** The cells were then stained with γ -H2AX (red), Map2 (green) and DAPI (blue). Scale bars: 20 μ m. **(B)** The percentage of γ -H2AX-positive primary retinal neurons was increased in the UV+LSKL group. **(C)** CCK8 assay showed that the cell viability of primary retinal neurons was impaired by LSKL pretreatment. * P <0.05.

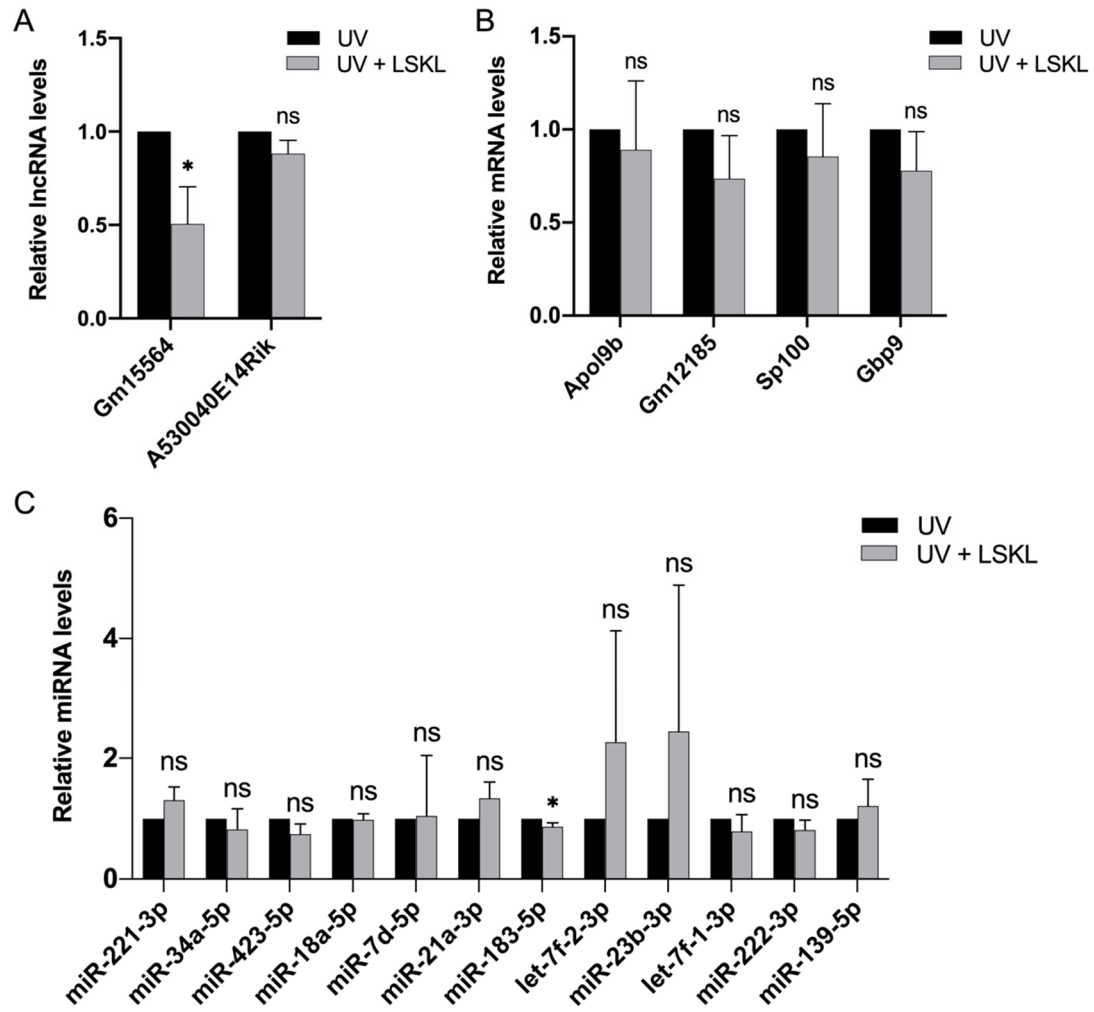


Figure S2. Relative RNA levels of lncRNA, miRNA, and mRNA components in the ceRNA network after LSKL treatment in 661W cells. 661W cells were pretreated with LSKL or control vehicle for 24 h and irradiated with UV. 1 h after UV exposure, the expression levels of lncRNAs (**A**), mRNAs (**B**) and miRNAs (**C**) in UV- and UV+LSKL-treated 661W cells were detected by RT-qPCR. Data are presented as the mean \pm SD from 3 independent experiments. * $P < 0.05$. Ns, no significance.

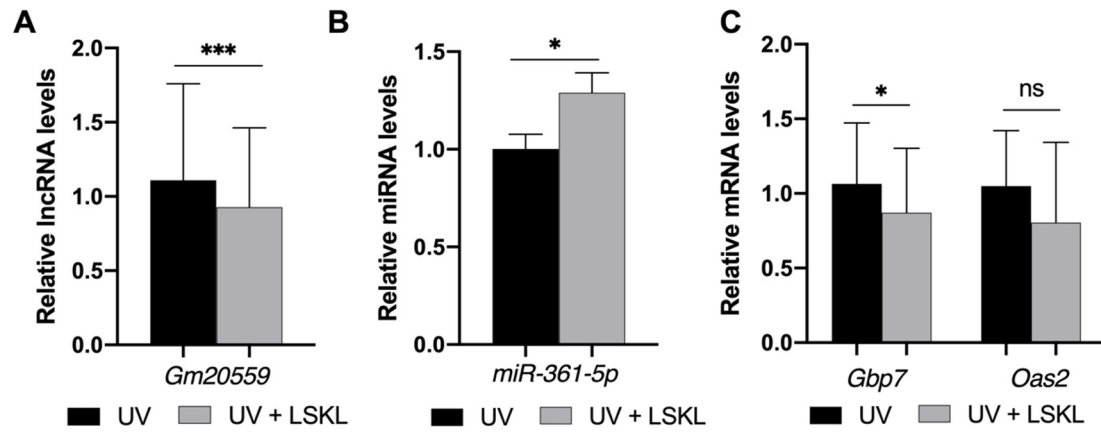


Figure S3. Relative RNA levels of lncRNA, miRNA, and mRNA components in the ceRNA network after LSKL treatment in primary retinal neurons. Primary retinal neurons were pretreated with LSKL or control vehicle for 24 h and irradiated with UV. 1 h after UV exposure, the expression levels of lncRNAs (A), mRNAs (B) and miRNAs (C) in UV- and UV + LSKL-treated cells were detected by RT-qPCR. Data are presented as the mean \pm SD from 3 independent experiments. * $P < 0.05$, *** $P < 0.001$. Ns, no significance.

Table S1: Primers used for RT-qPCR

Type	Name	Primer sequences	
		Forward 5'—3'	Reverse 5'—3'
mRNA	<i>Gbp5</i>	CAGACCTATTGAACGCCAAAGA	TGCCTTGATTCTATCAGCCTCT
	<i>Gbp7</i>	AACTGAGGGTGAACCTCAAAGC	GTTCAGACCTAACTGTGGTGC
	<i>Sp100</i>	TGATGGAGGGAACCCAACTC	GGATGACCCATTCGGGCTT
	<i>Pde1a</i>	TTTCTTGCCTAATTGCCTTTGC	GAGCCAGTGCATGATACCTGT
	<i>Apo19b</i>	GGATACCTGTATAGCCTGGTGG	CAGTTCCTCAGAGCTTTGTG
	<i>Oas2</i>	AAACCTCACCCCAACGAAAA	CCACCCCTAGCCACTTCCT
	<i>Gbp9</i>	TCGCCCTAAGTGTCTTCTG	CGTGGGGATTTCGGGAAGA
	<i>Gm12185</i>	GGAGACCACCCTACTGAAGGA	GAAATCCCTCTCCGGGCAA
	<i>Actin</i>	AGGTCATCACTATTGGCAACG	ACGGATGTCAACGTCACACTT
lncRNA	<i>Gm15564</i>	TCTCTCAGTCCCTACCTGCT	GTGCAGAGGAGGAGACAGAA
	<i>Gm20559</i>	GGTGGATTGAGCTCCGAGAG	GGCCATGATCTTACTTTGGCC
	<i>A530040E14Rik</i>	GCCACAGCTTAGGTGTGCTA	CTCCAGGGATGAAGGGACAT
		RT 5'—3'	Forward 5'—3'
miRNA	miR-18a-5p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACCTATCT	GGGTAAGGTGCATCTAGTGC
	miR-27a-3p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACGCGGAA	GGGGTTCACACTGCCTAAG
	let-7f-2-3p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACGAAAGA	GGGCGCTATACAGTCTACTG
	let-7f-1-3p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACGGGAAG	GGGCGCTATACAATCTATTGC
	miR-221-3p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACGAAACC	GGGAGCTACATTGTCTGCTG
	miR-222-3p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACACCCAG	GGGGAGCTACATCTGGCTA
	miR-139-5p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACCTGGAG	GGGTCTACAGTGCACGTGT
	miR-23b-3p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACGGTAAT	GGGATCACATTGCCAGGG
	let-7d-5p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACAACAT	GGGGAGAGGTAGTAGTTGC
	miR-361-5p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACGTACCC	GGGGTTATCAGAATCTCCAG
	miR-423-5p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACAAAGTC	GGATGAGGGGCAGAGAGCGA
	miR-34a-5p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACACAACC	GGGTGGCAGTGTCTTAGCT
	miR-21a-3p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACGACAGC	GGGCAACAGCAGTCGATGG
	miR-183-5p	GTCGTATCCAGTGCCTGTCGTGGAGTCGGCAATTGCACTGGATAC GACAGTGAA	GGGTATGGCACTGGTAGAA
	Loop-Reverse	CAGTGCCTGTCGTGGAGT	
	U6	CGCTTCACGAATTGCGTGTCTAT	GCTTCGGCAGCACATATACTAAAAT

Table S2: Sequences of siRNAs and miRNA mimics

Type	Name	Sequences	
		Forward 5'—3'	Reverse 5'—3'
siRNA	<i>Gm20559</i> #1	GUACAGGUCUAUCGAAUUATT	UAAUUCGAUAGACCUGUACTT
	<i>Gm20559</i> #2	GACUACUCCUCCAAUAGAATT	UUCUAUUGGAGGAGUAGUCTT
	<i>Gm20559</i> #3	CCAGCAAUUGUCACCUAATT	UUAGGUGACAAUUGCUGGTT
miRNA mimics	miR-361-5p	UUCACAGUGGCUAAGUCCGC	GGAACUUAGCCACUGUGAAUU