Supporting Information

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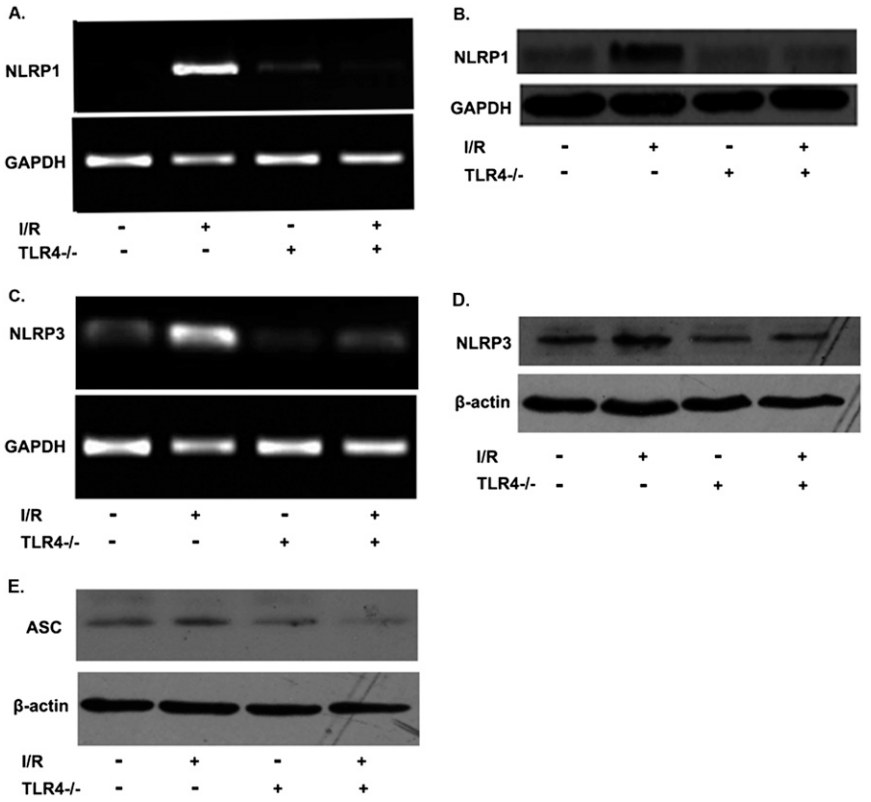

Fig. S1. Knockdown of Toll-like receptor 4 (TLR4) suppressed the intraocular pressure (IOP)-induced activation of NLRP1 (*A* and *B*), NLRP3 (*C* and *D*), and Apoptosis-associated speck-like protein containing CARD (ASC) (*E*) ($n = 12$, all). Representative images are shown.

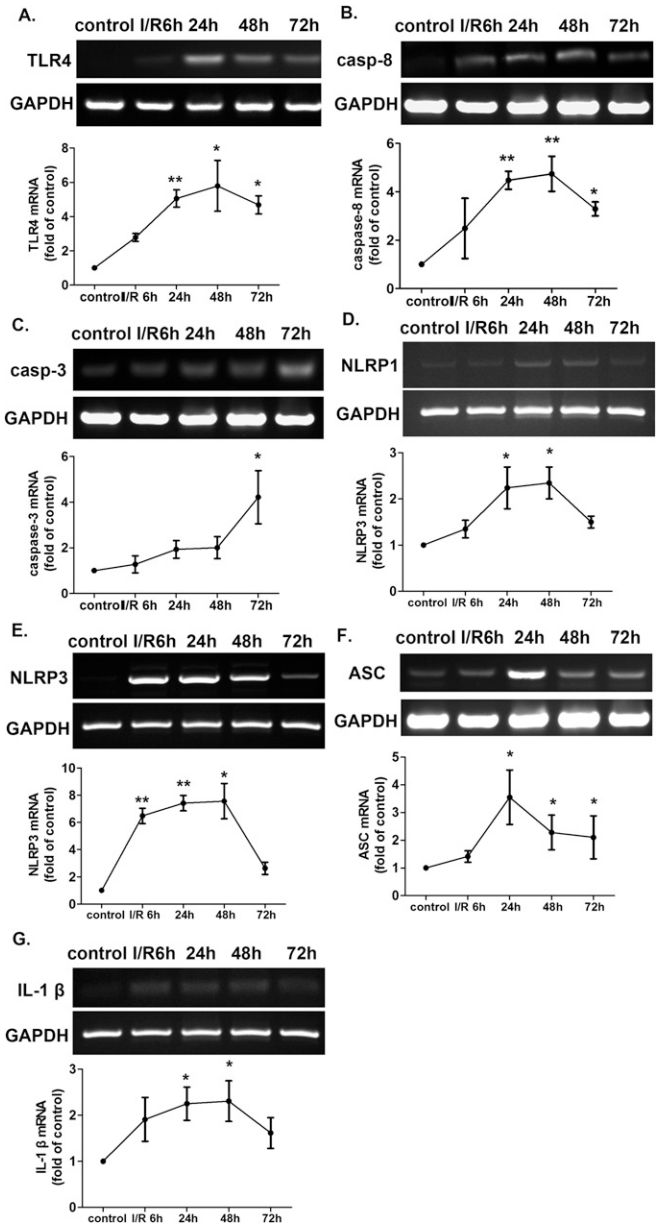

Fig. S2. TLR4–caspase-8–inflammasome pathway was activated in rat models of acute glaucoma. Expression levels of TLR4 (*A*), caspase-8 (*B*), NLRP1 (*D*), NLRP3 (*E*), ASC (*F*), and IL-1β (*G*) ($n = 9$, all) were up-regulated as early as 6 h in the development of acute glaucoma in rats. (*C*) However, the level of caspase-3 mRNA was only elevated 72 h after IOP elevation in rat models ($n = 9$). Representative images are shown. Data are presented as mean ± SD; $^{*}P < 0.05$, $^{**}P < 0.001$.

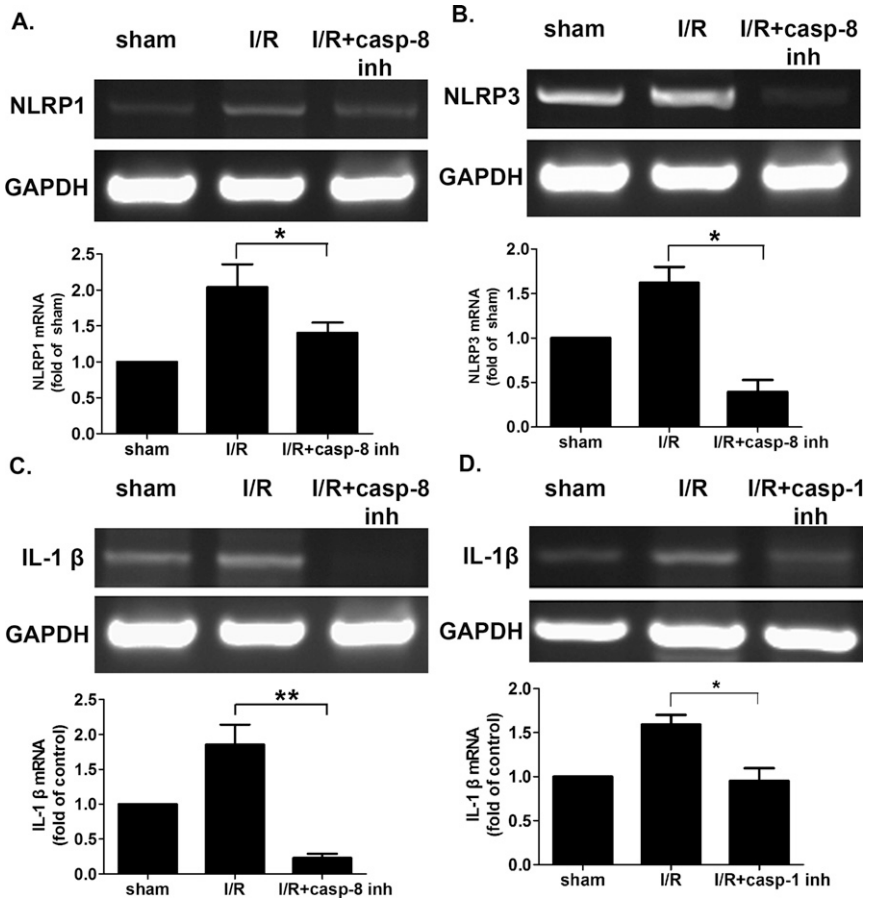

Fig. S3. Caspase-8 was necessary for processing of IL-1β via caspase-1–dependent NLRP1 and NLRP3 inflammasome activation and the caspase-1–independent pathway in rats. Inhibition of caspase-8 by intravitreous injection of Z-IETD-fmk (20 μM) significantly suppressed IOP-induced NLRP1 (*A*) ($n = 9$) and NLRP3 (*B*) ($n = 9$) activation in rat acute glaucoma models. (*C*) Inhibition of caspase-8 completely suppressed the processing of IL-1β ($n = 9$). (*D*) Intravitreous injection of caspase-1 inhibitor, Z-YVAD-fmk (20 μM), only partially reduced the processing of IL-1β ($n = 9$). Representative images are shown. Data are presented as mean ± SD; $*P < 0.05$, $**P < 0.001$.

Table S1. Mouse primer sequences including annealing temperature and product size

Gene	Primer sequence (forward primer, reverse primer) (5′-3′)	Annealing temperature, °C	Product size, bp
TLR4	GAGCCGTTGGTGTATCTTTGA CTCCCATTCCAGGTAGGTGTT	55	166
Caspase-8	CTCCGAAAAATGAAGGACAGA CGTGGGATAGGATACAGCAGA	59	193
Caspase-3	AAGGAGCAGCTTTGTGTGTGT AAGAGTTTCGGCTTTCCAGTC	59	144
NLRP1	GCCAAAGAGGCTCAGAAAACT CAAGTAAACTGCCCAGCAGAG	59	474
NLRP3	GGTCCTCTTTACCATGTGCTTC AAGTCATGTGGCTGAAGCTGTA	59	365
IL-1β	TGAAATGCCACCTTTTGACAG CCACAGCCACAATGAGTGATAC	60	185
GAPDH	AGGTCATCCCAGAGCTGAACG CACCCTGTTGCTGTAGCCGTAT	55	269

Table S2. Rat primer sequences including annealing temperature and product size

Gene	Primer sequence (forward primer, reverse primer) (5′-3′)	Annealing temperature, °C	Product size, bp
TLR4	CAGGGAATTAGGCTCCATGA TCCATGACAGAACGGTCAAA	58	164
Caspase-8	CTGGGAAGGATCGACGATTA TGGTCACCTCATCCAAAACA	54	100
Caspase-3	GAAACCTCCGTGGATTCAAA AGCCCATTTCAGGGTAATCC	56	124
NLRP1	TTGACATCAAGGCTGAGCAC CTTGCTGGCGTTTCTAGGAC	59	142
NLRP3	GGGACTCAAGCTCCTCTGTG GAGGCTCTGGTTATGGGTCA	56	133
ASC	TGGCTACTGCAACCAGTGTC CCATACAGAGCATCCAGCAA	57	124
IL-1β	CAGGAAGGCAGTGTCACTCA AAAGAAGGTGCTTGGGTCCT	60	100
GAPDH	TGCCACTCAGAAGACTGTGG GTCCTCAGTGTAGCCCAGGA	56	292