

Proteomics identifies multiple retinitis pigmentosa associated proteins involved in retinal degeneration in a mouse model bearing a *Pde6b* mutation

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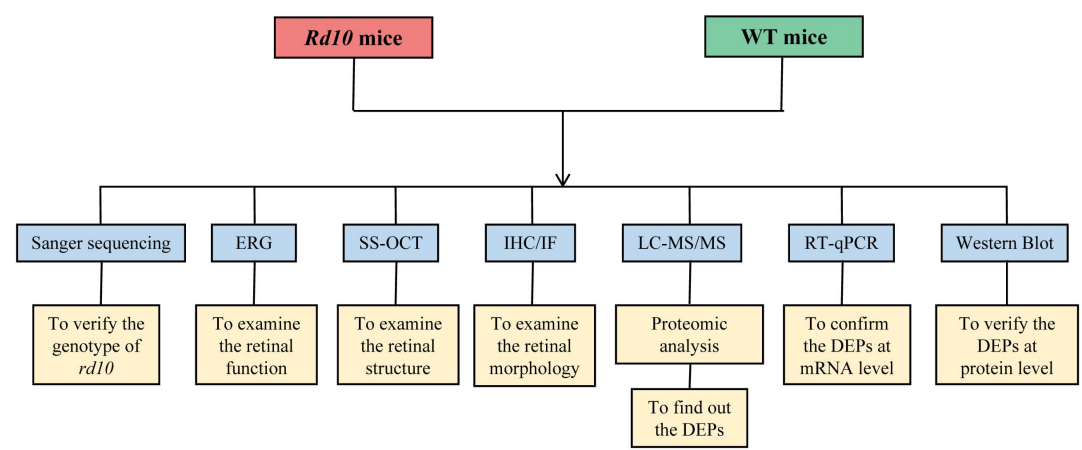
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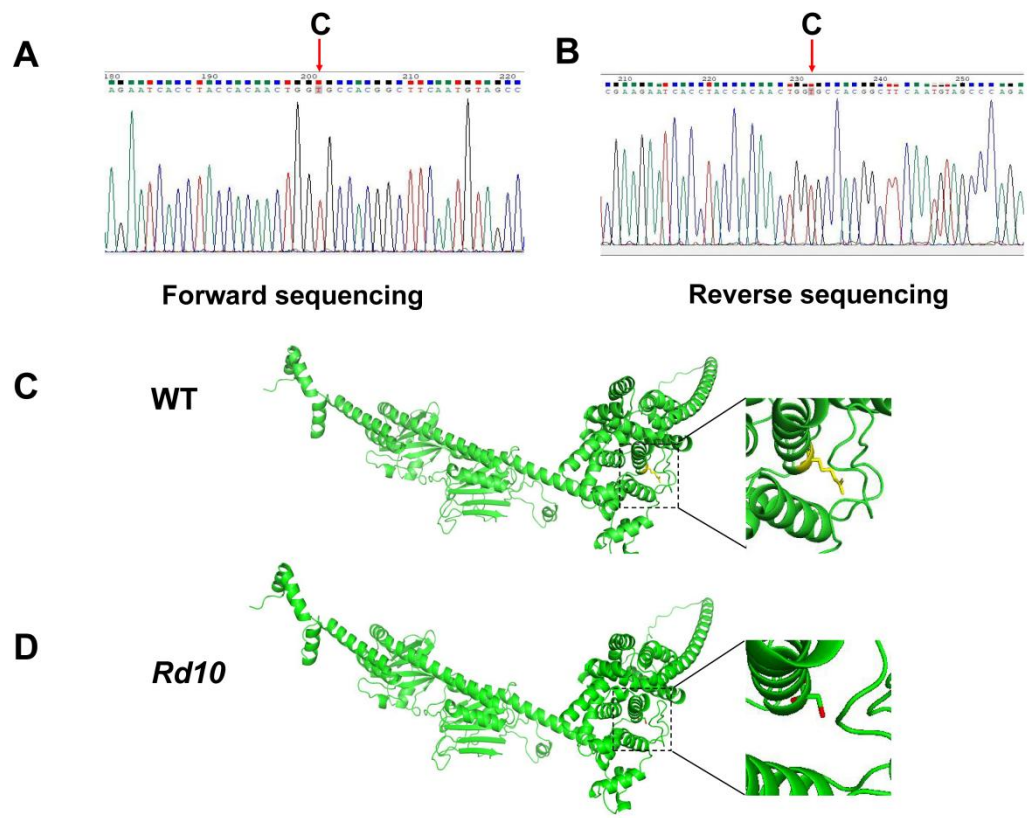
E-mail: boleiy99@zzu.edu.cn

Supplementary Data

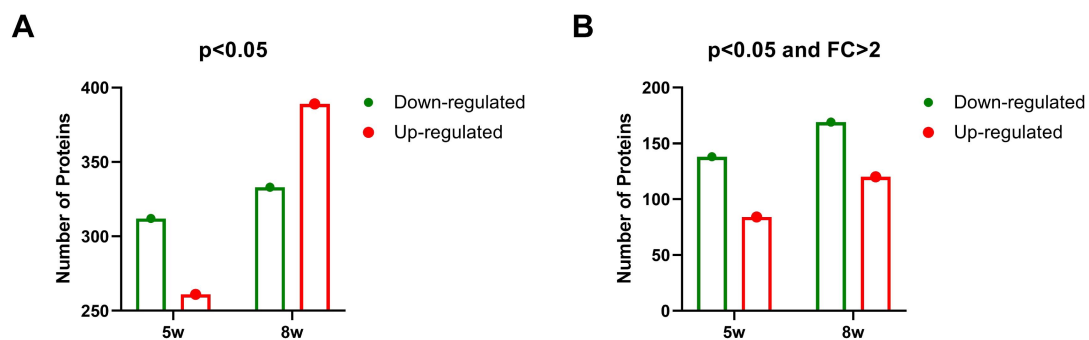
Supplementary Figure S1: The work flowchart of this study (n=6-8 mice per group).



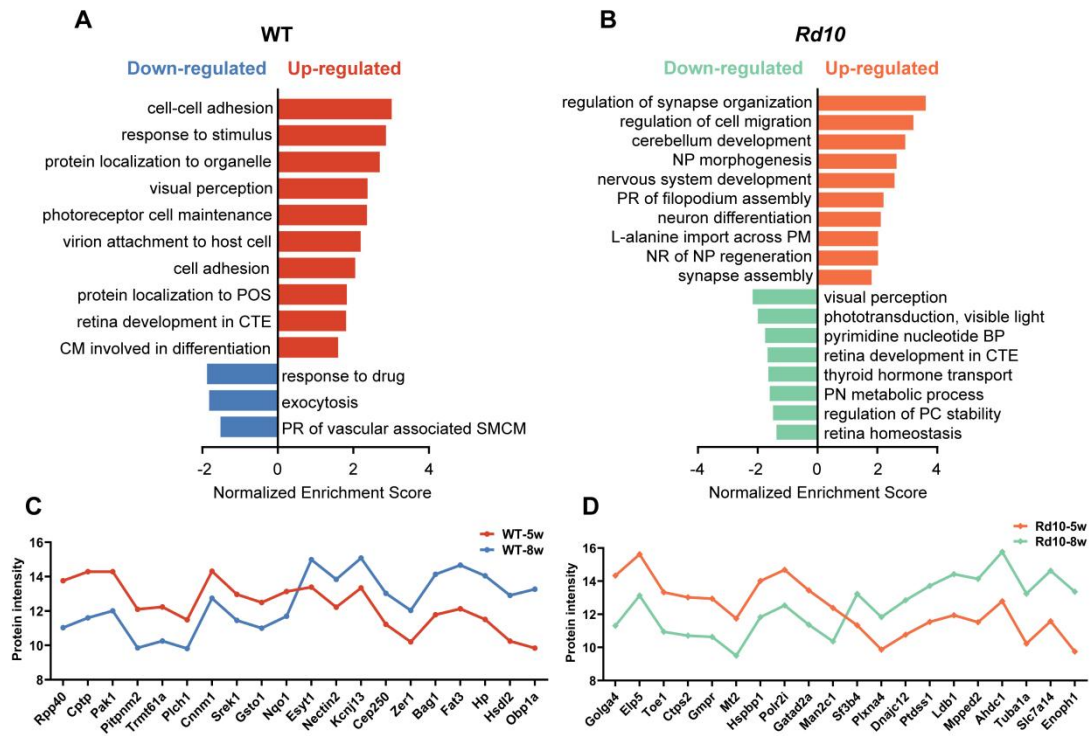
Supplementary Figure S2: The genotype identification of *rd10* mice containing *Pde6b* mutation (n=3 mice per group). (A) (B) Forward and reverse Sanger sequencing confirmation of *rd10* mice. (C) (D) Pde6b protein structures and the mutation site in wild type and *rd10* mice (R560C, Arg in yellow, Cys in red).



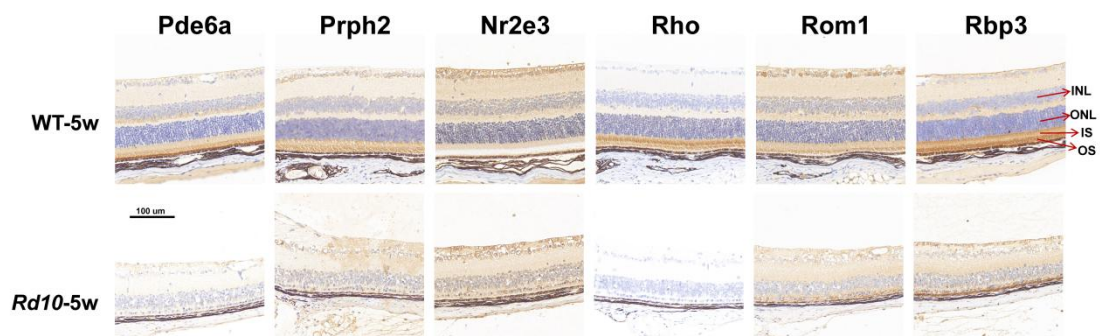
Supplementary Figure S3: The numbers of down-regulated proteins and up-regulated proteins in *rd10* mouse retinas at 5w and 8w (n=3 retinas per group). (A) There are 312 down-regulated and 261 up-regulated proteins at 5w, and 333 down-regulated and 389 up-regulated proteins at 8w ($p < 0.05$). (B) There are 138 down-regulated and 84 up-regulated proteins at 5w, and 169 down-regulated and 120 up-regulated proteins at 8w ($p < 0.05$ and $FC > 2$).



Supplementary Figure S4: Horizontal analysis of DEPs in WT and *rd10* mice (n=3 retinas per group). (A) Biological process pathways enriched with DEPs in WT retinas at 8w compared to 5w. (B) The up-regulated and down-regulated BP pathways in *rd10* retinas at 8w. (C) The protein intensity of top 20 DEPs in WT changed with growth and development. (D) The protein intensity of top 10 decreased DEPs and top 10 increased DEPs in *rd10* mouse retinas at 8w.

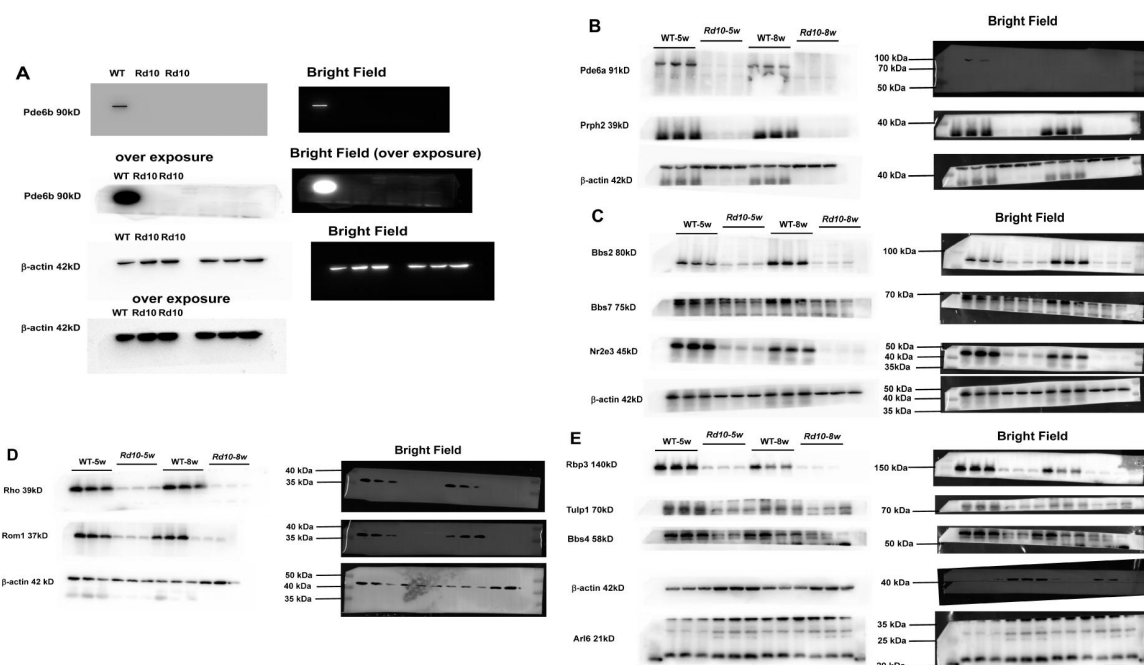


Supplementary Figure S5: The immunohistochemical results in WT and *rd10* mouse retinas at 5 weeks (n=3 eyes per group). The expression and location of Pde6a, Prph2, Nr2e3, Rho, Rom1 and Rbp3 proteins in WT and *rd10* retinas. INL: inner nuclear layer; ONL: outer nuclear layer; IS: inner segment; OS: outer segment.



Supplementary Figure S6: The Original Western Blots. (A) The Original Western

Blots of Figure 1B. (B) The Original Western Blots of Figure 7A. (C) The Original Western Blots of Figure 7B. (D) The Original Western Blots of Figure 7C. (E) The Original Western Blots of Figure 7D.



Supplementary Table S1 Primer sequences for qPCR

Gene	Forward Primer	Reverse Primer
Actb	CTACCTCATGAAGATCCTGACC	CACAGCTTCTCTTTGATGTCAC
Pde6b	GACATCAAAGTCATTCCCACAC	GATAAAGCCACTTTCTGCTACG
Rom1	CAAACGTCTGATGGATGAGTTG	GGGACGCCATCAATCAGATATA
Rho	CCATCAACTTCCTCACGCTCTACG	GTGGTGGTGAATCCTCCGAAGAC
Prph2	GGCTGTCTGCATCTTCTTTAAC	ATCCCATTCTTGAGTCCGTAAG
Cnga1	ACAAGTGGCTGTTTTGTATCAC	ACTGGAGTTCATCAAAACATGC
Pde6a	ACTAACAACCGCAAGGAATGGAAG	CTGCCTGCTGCTTCTGCTTCTC
Rdh12	CTTTCCTCAATAGCTCACCTGA	GTGATCTCTGACAATACAACGC
Rbp3	CACGACTCTTCATCTCTTACGA	ACACATGGCTCACTAAGAAGTC
Abca4	CCGCCTATTCTTACGACAAAAG	CAACTTCCTAACTCGATCCAGT
Sag	TTTTTCTCGGGTCCAGGTATAC	CATCACTGAACAGGGTAGGTAG
Impdh1	TCATGGGAGGAATTGGTTTCAT	TCAAAGTCTTCTGACCTTCCGTA

Prom1	ATGATCCTTGTGGTTCTTACGT	ATTG TTCCTTGAGCAGATAGGG
Nr2e3	ACAGCAGCAGTGGGAAACATTATG	AGCCTCCTTCTCACACTCCTCTTG
Guca1b	GAGATGGATGTGGCGGAGTTGC	TCATTGCCCCGTGACCTTGAAGAAG
Bbs4	CATGCTCTTGGCTGTGGCTCTG	GGGTTACACTTATCCAGGCGAACAG
Bbs2	CCAGAAGACAGTAACGTTTCAGA	GATGATGTCACCAGCTAGATCA
Tulp1	GCTGTGGTCTATGAAACCAATG	CTTGTTATGGAGCTCGATGAGA
Bbs7	GTCCGAGATTAGAGGCTTTACA	GAGGTCAGAGCCAGATATGTAC
Arl6	TTGATACCCTTCTGAATCACCC	TTCACAGCTTGGATCTGATCTT

Supplementary Table S2 Quantitative proteomic profiling of mouse retinas. (See
Excel File)

Supplementary Table S3 Functional analysis summary of DEPs ($p < 0.05$). (See Excel
File)