

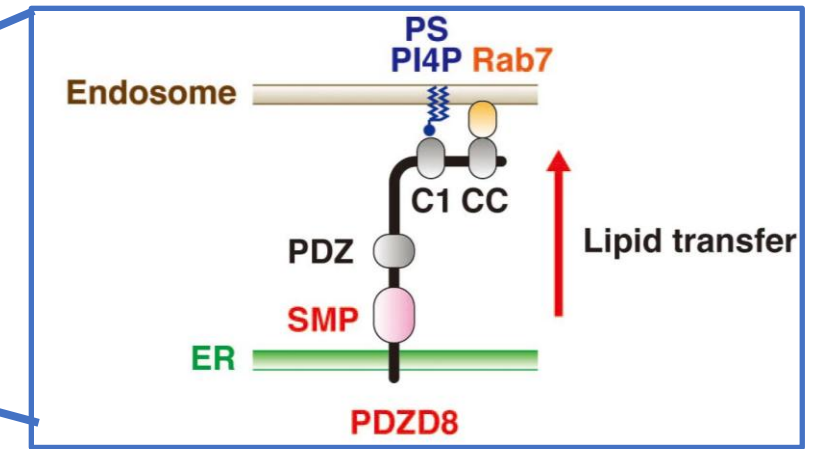
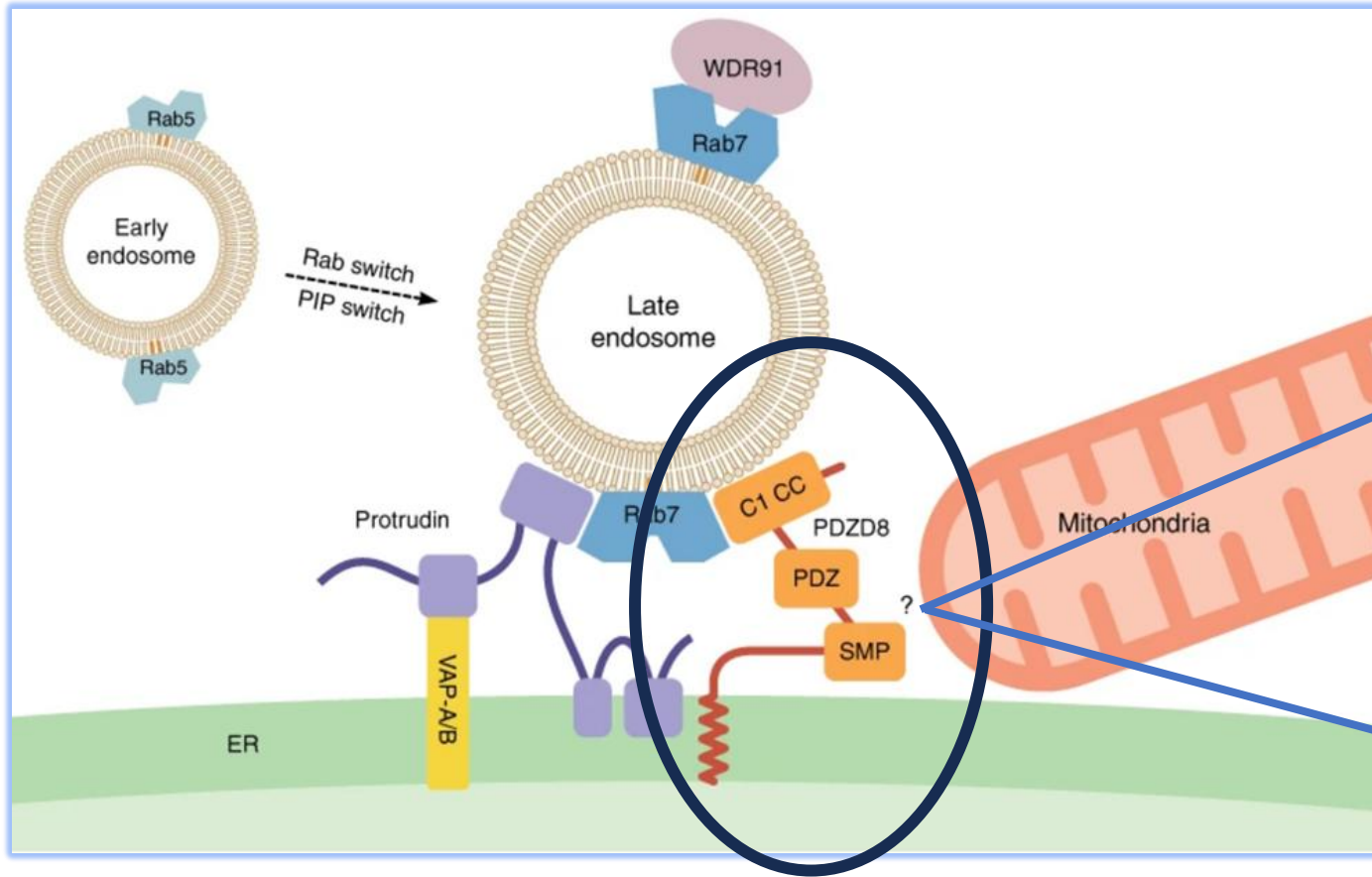
APCN X TSN 2025_YIA_002

The Organelle Tethering Protein PDZD8 Regulates Endolysosomal Maturation and TLR9–NF- κ B Signaling in Cisplatin-Induced Acute Kidney Injury

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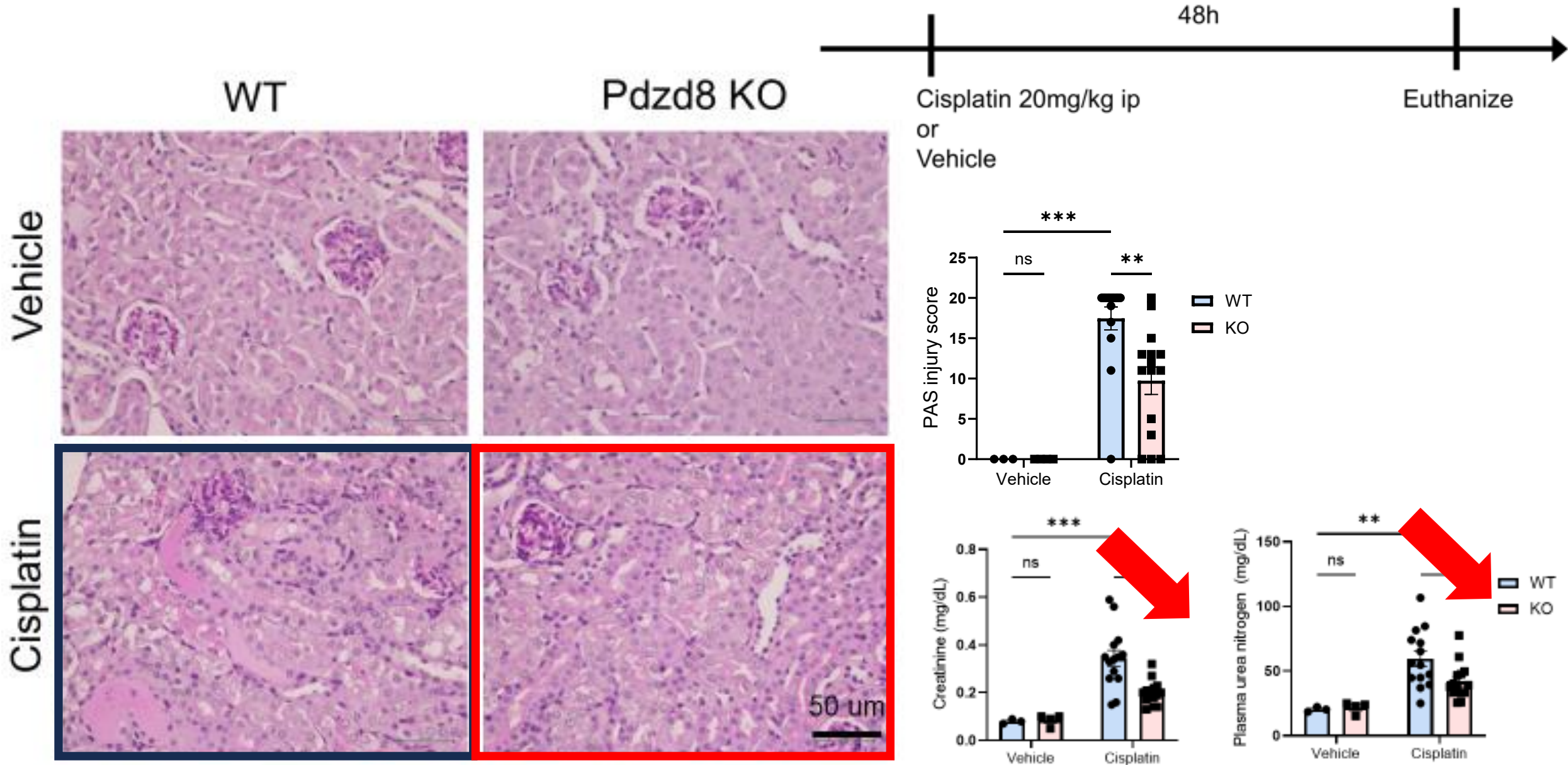
What role does organelle interaction play in kidney disease?



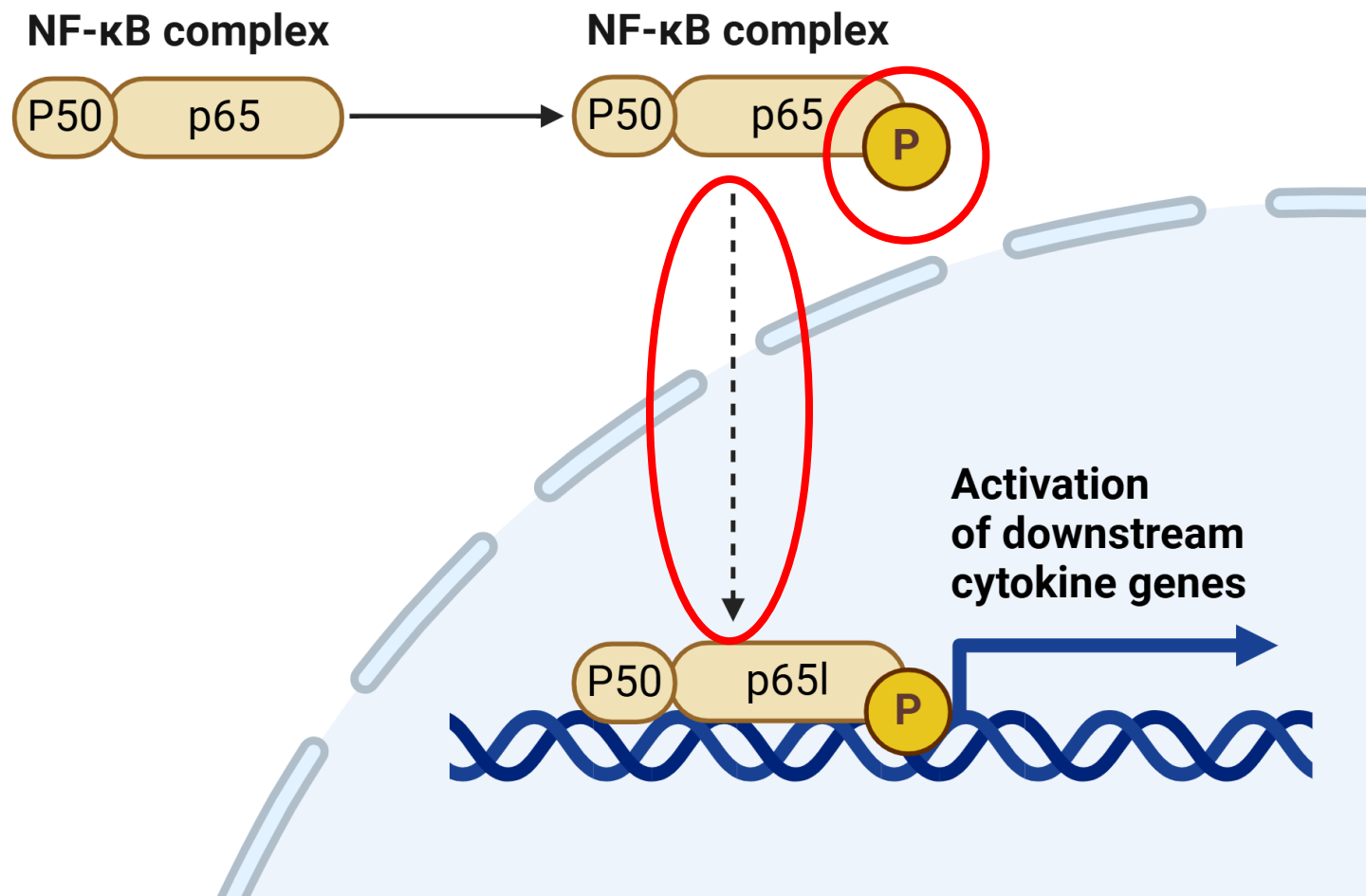
(Yael Elbaz-Alon, et al. Nat Commun 2020)

We will clarify the role of organelle interaction through **PDZD8** in kidney disease.

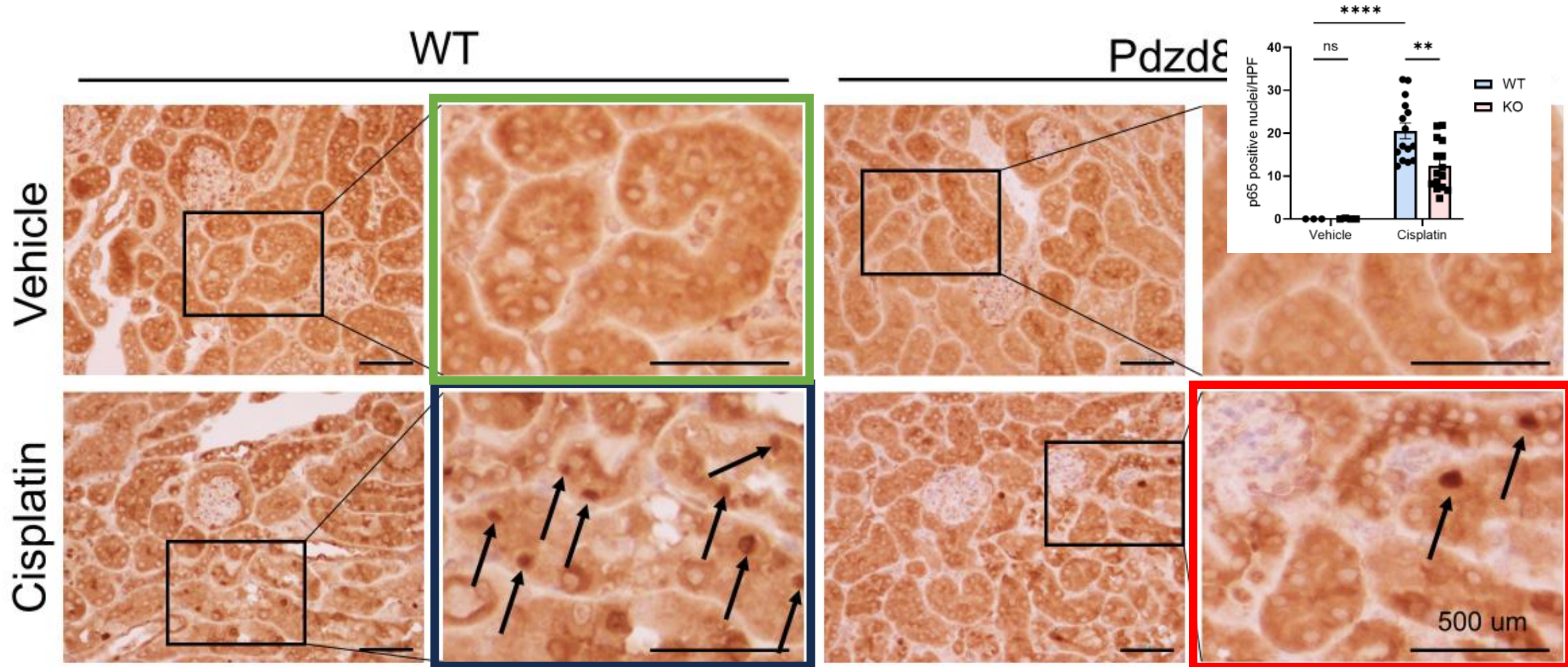
PDZD8 KO ameliorates cisplatin-induced acute kidney injury in mice.



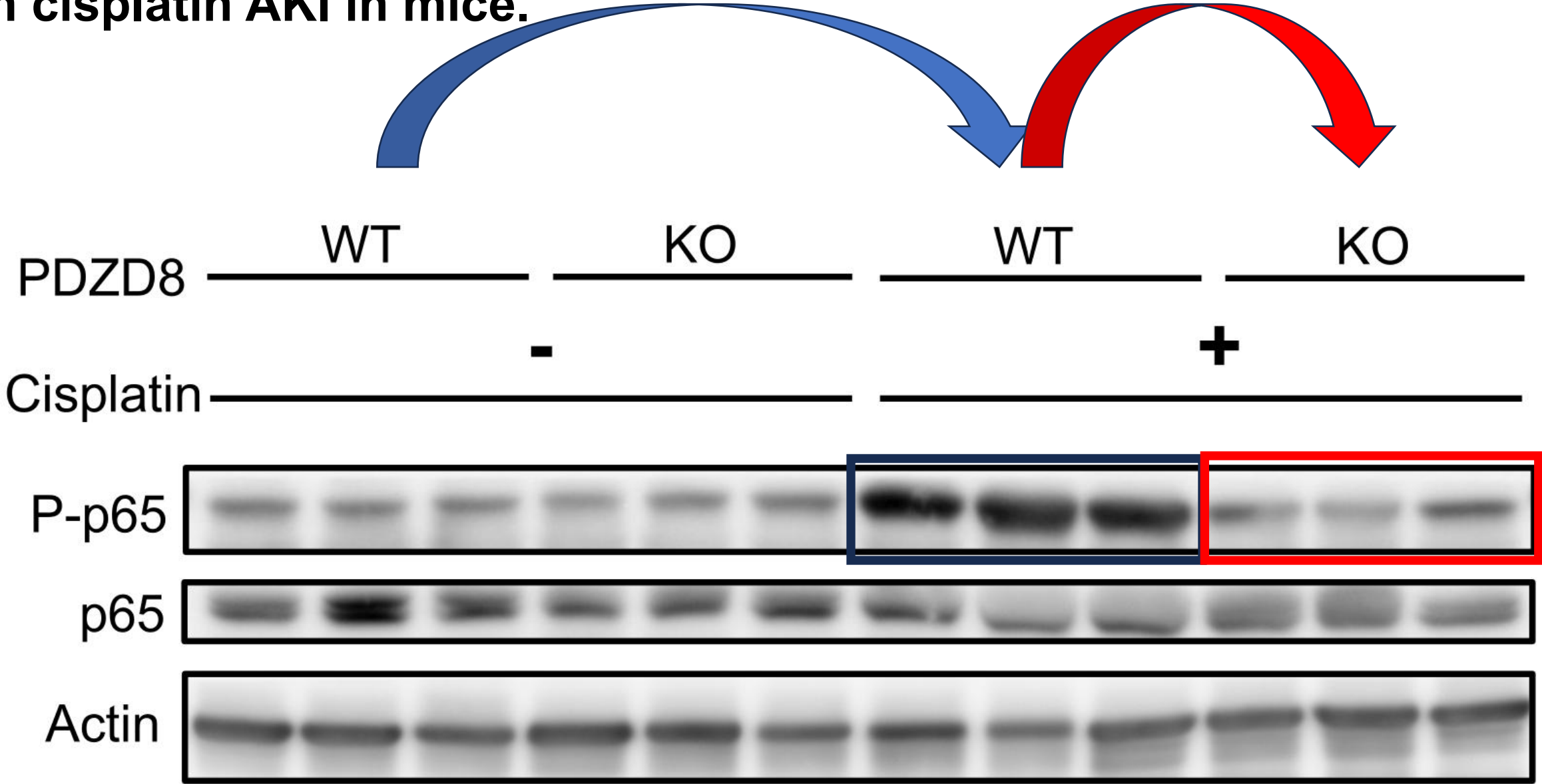
NF- κ B pathway



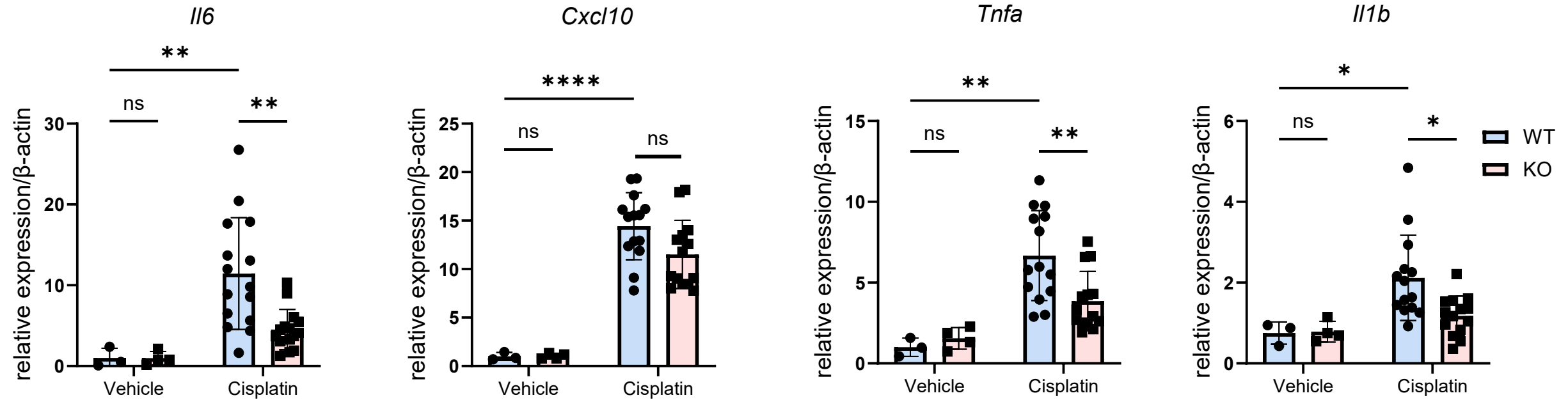
PDZD8 KO attenuates NF- κ B inflammatory response in cisplatin AKI in mice.



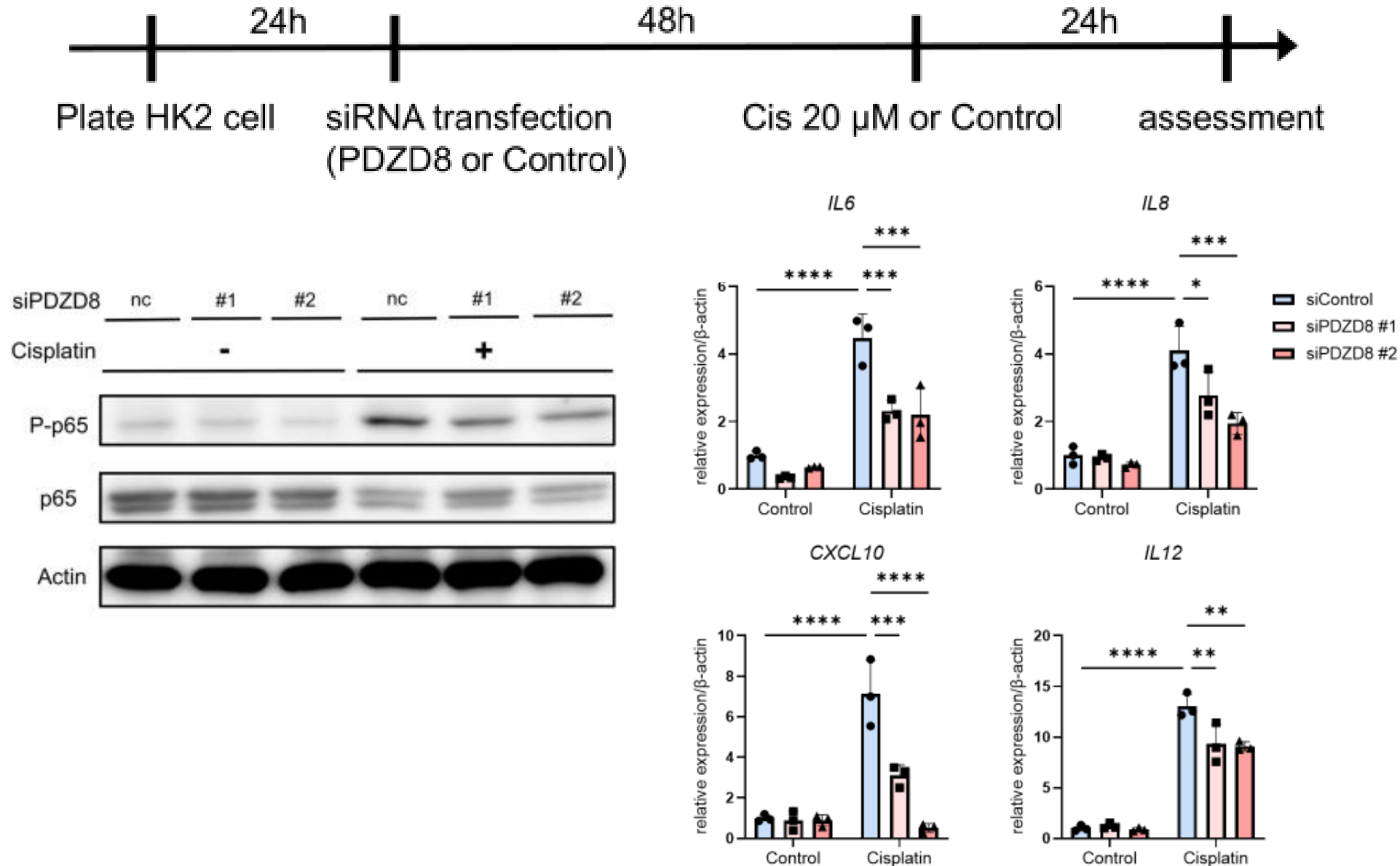
PDZD8 KO attenuates NF- κ B inflammatory response in cisplatin AKI in mice.



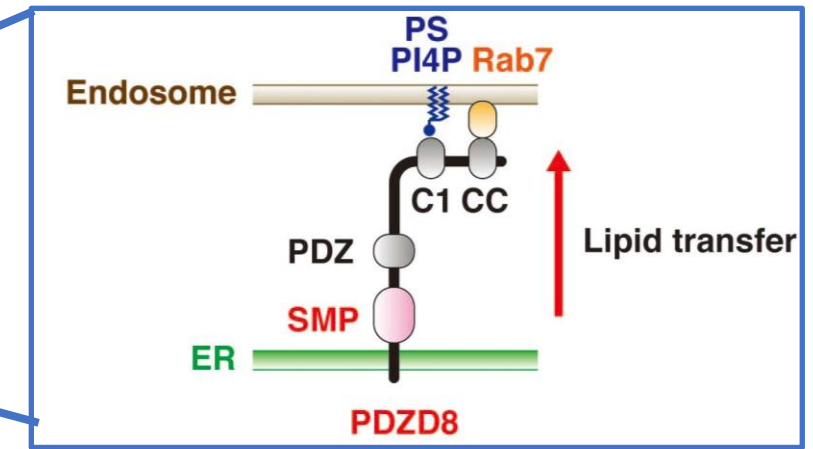
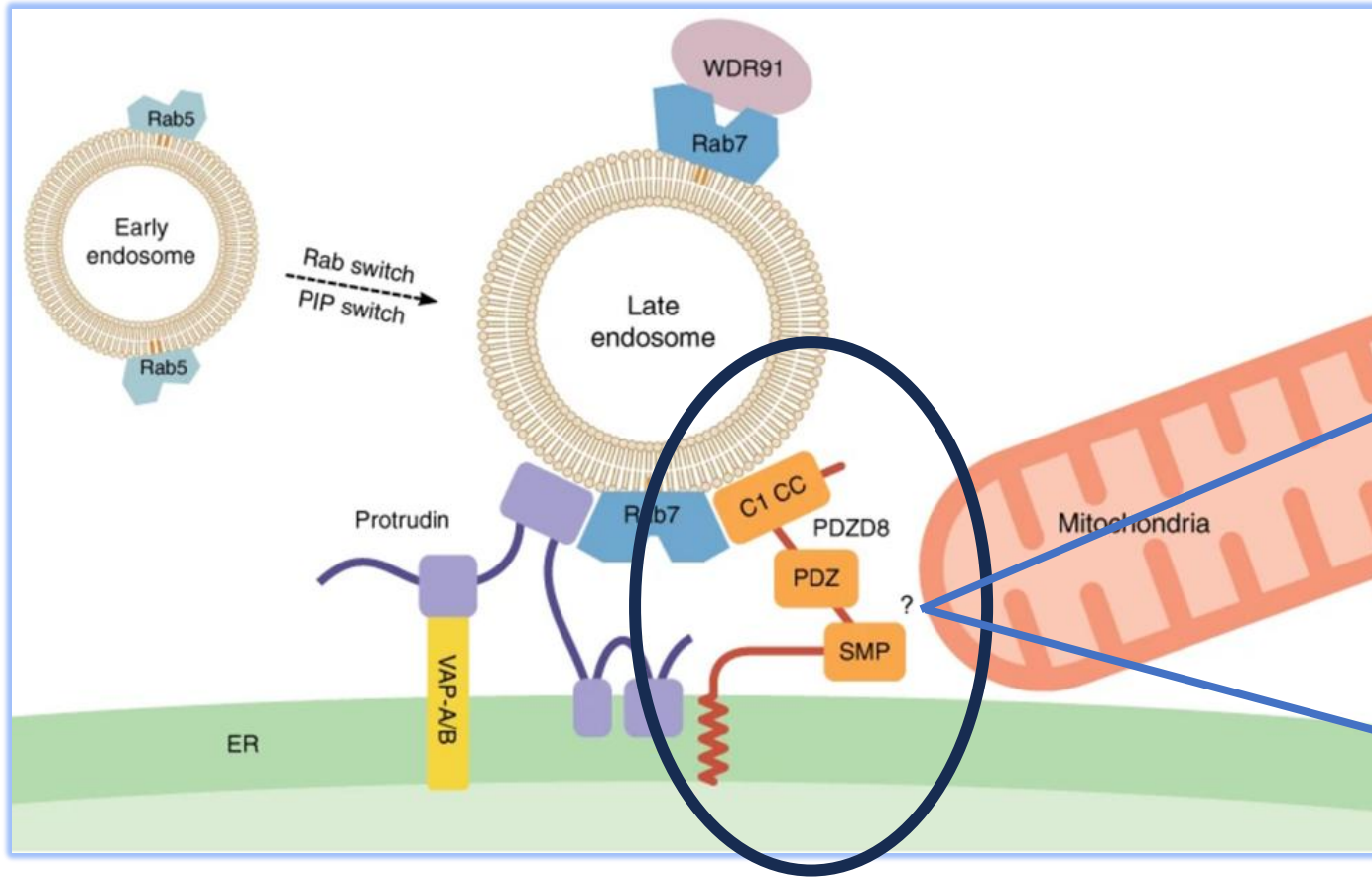
PDZD8 KO attenuates NF- κ B inflammatory response in cisplatin AKI in mice.



PDZD8 KD attenuates cisplatin-induced NF- κ B pathway.



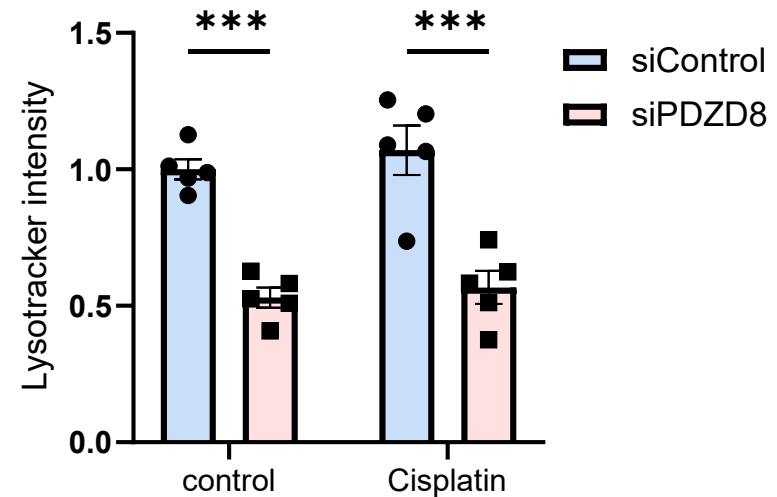
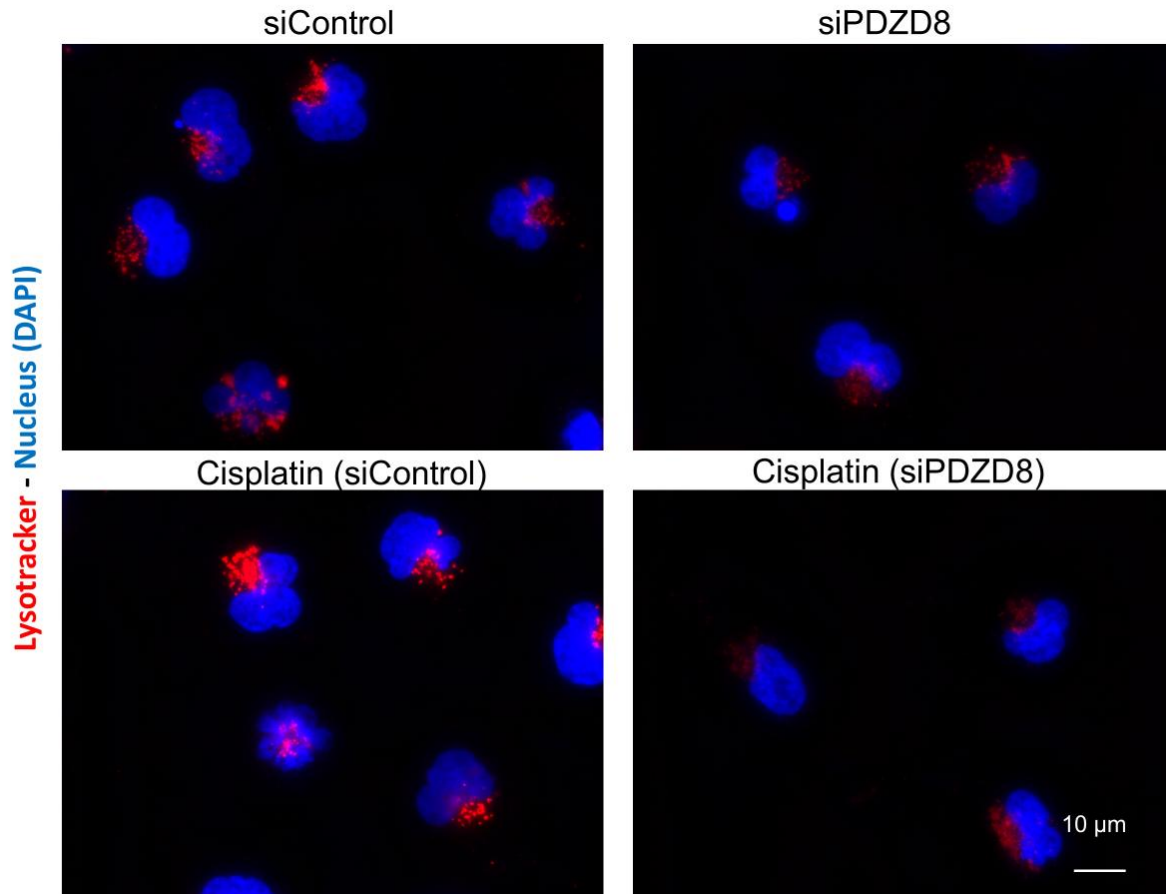
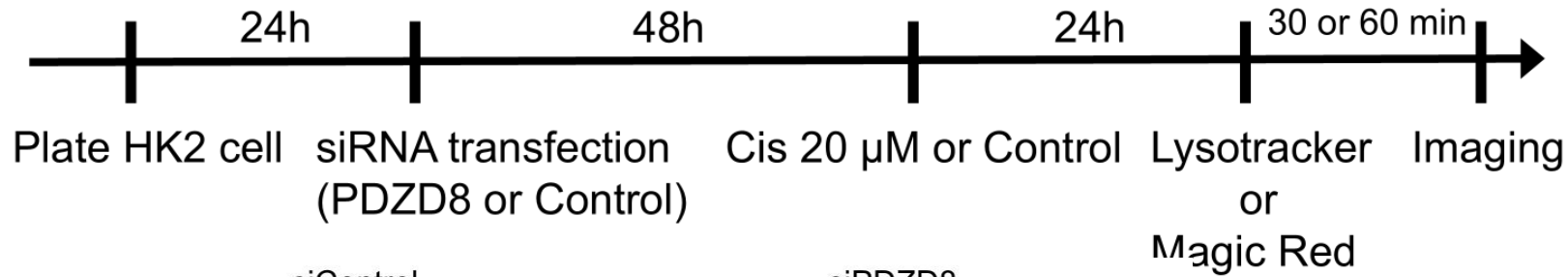
What role does ER-endolysosome interaction play in kidney disease?



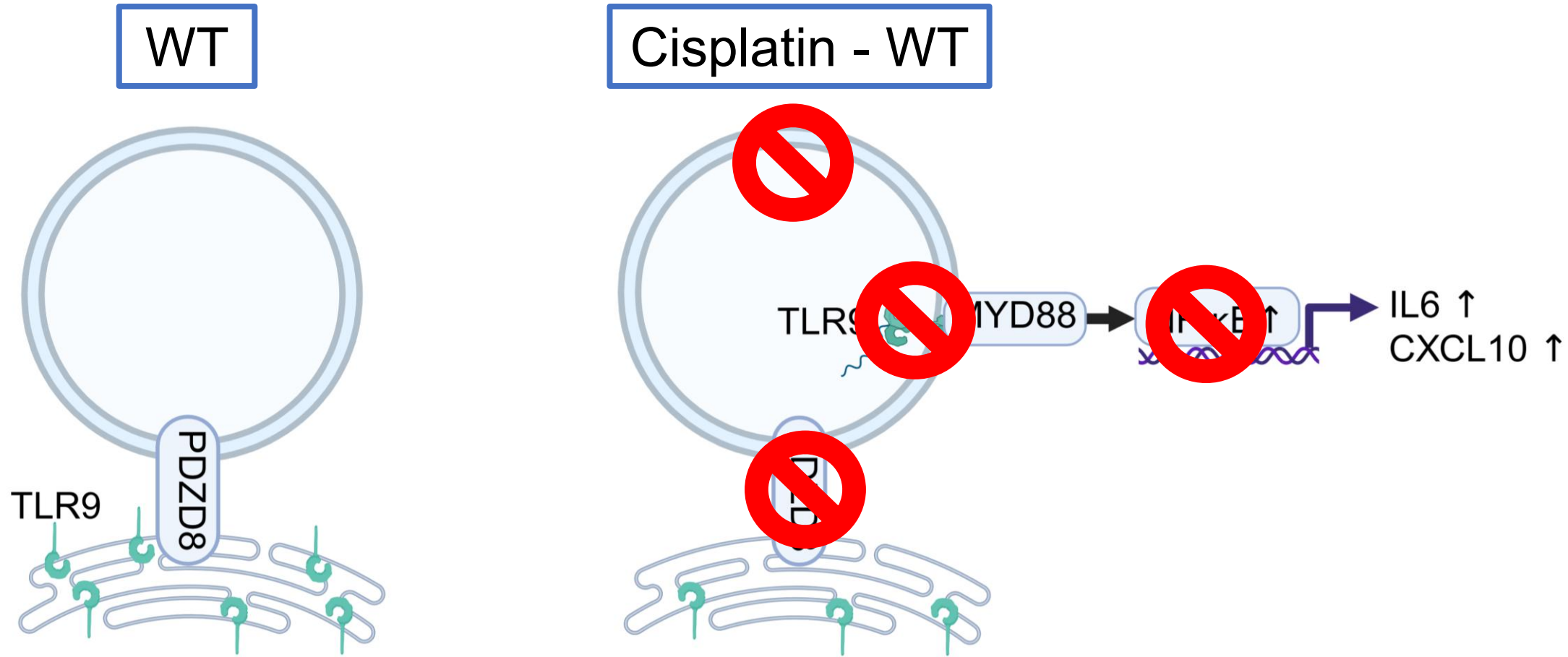
(Yael Elbaz-Alon, et al. Nat Commun 2020)

We will clarify the role of ER-endolysosome interaction through PDZD8 in kidney disease.

PDZD8 regulates lysosomal homeostasis

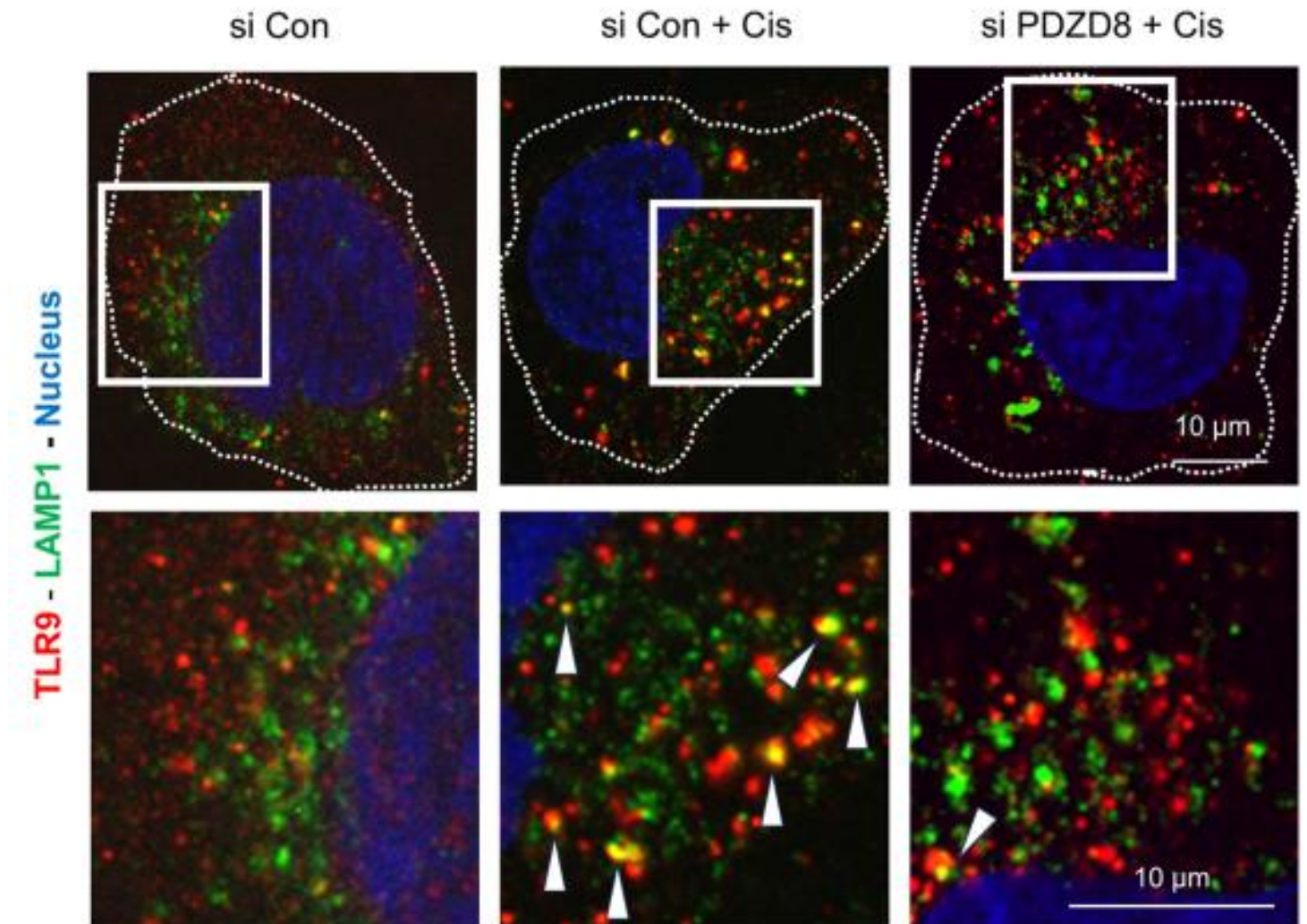
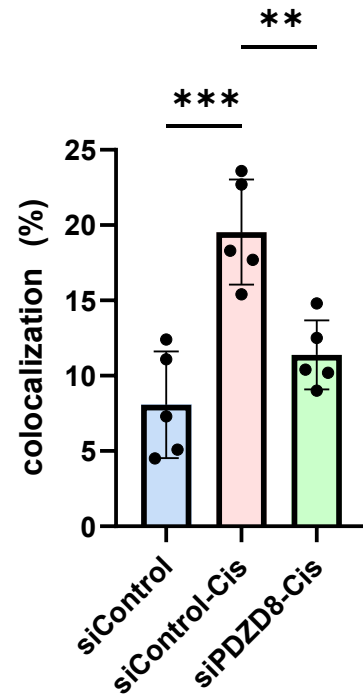


Hypothesis

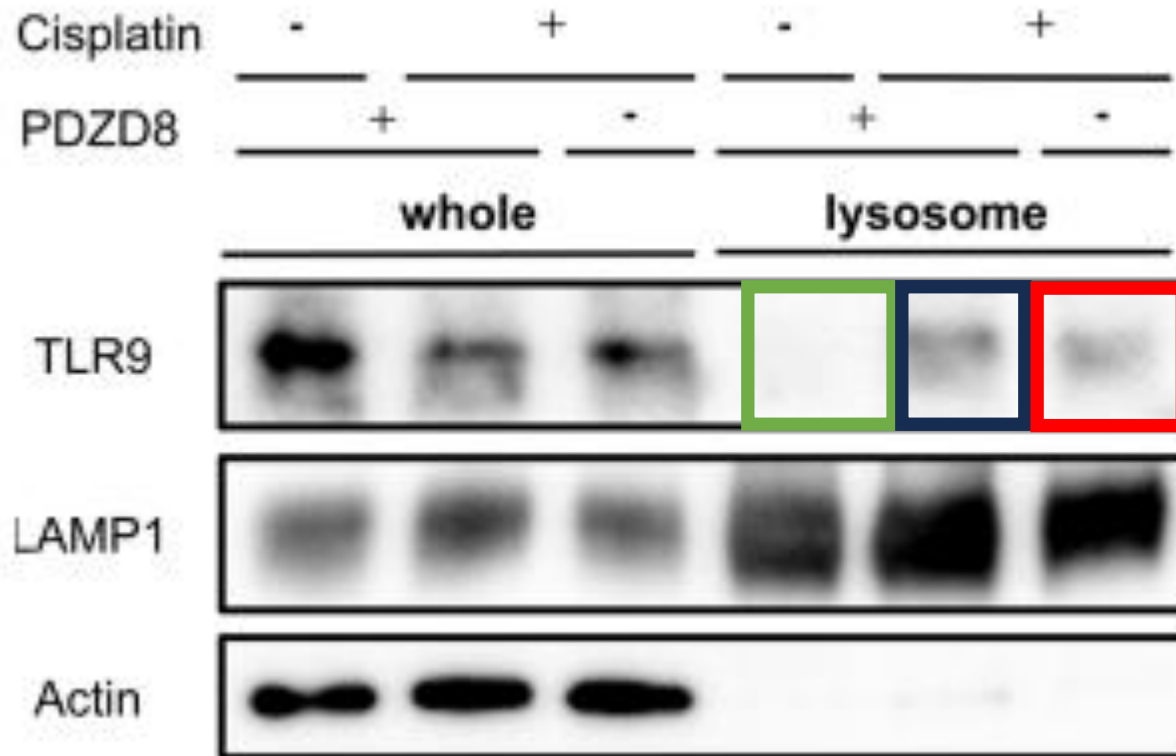
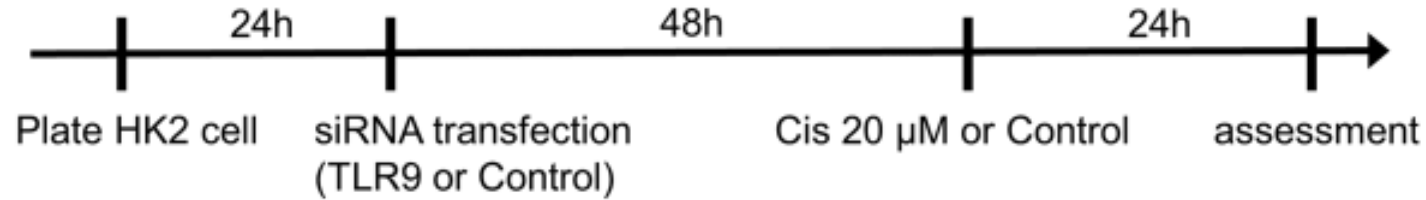


PDZD8 deficiency prevents endolysosomal maturation and attenuates TLR9–NF- κ B signaling in cisplatin-AKI.

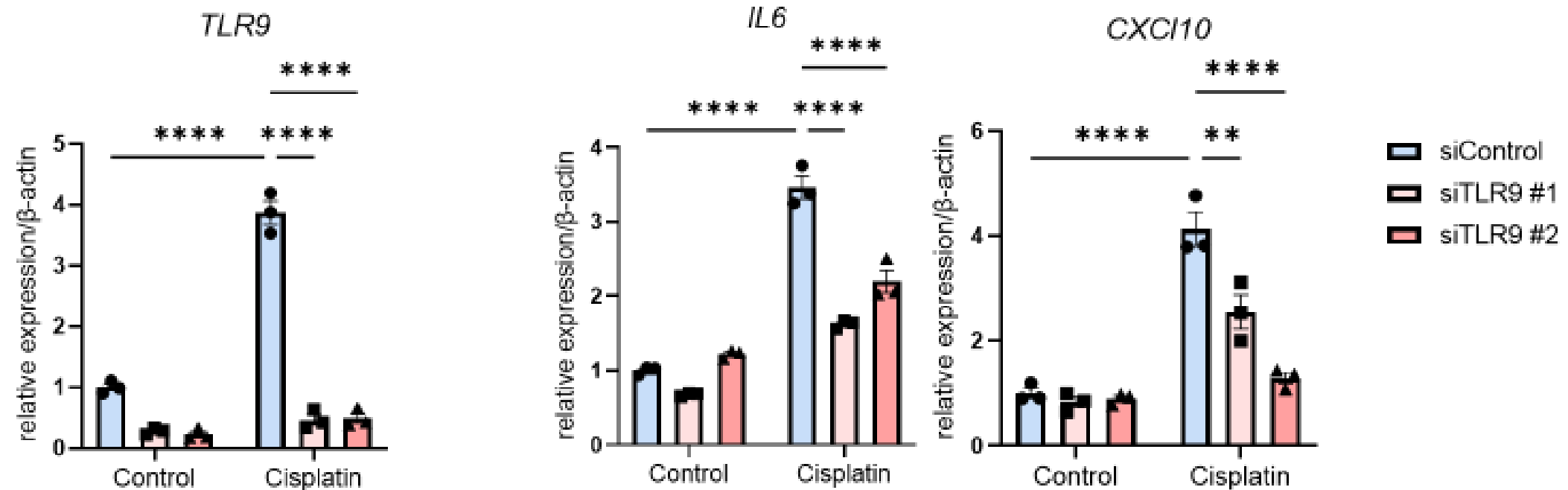
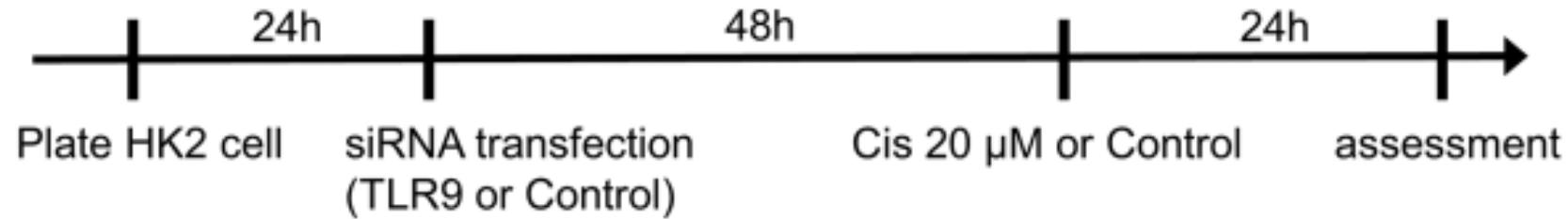
PDZD8 KD impairs Cisplatin-induced TLR9 translocation to endolysosomes



PDZD8 KD impairs Cisplatin-induced TLR9 translocation to endolysosomes

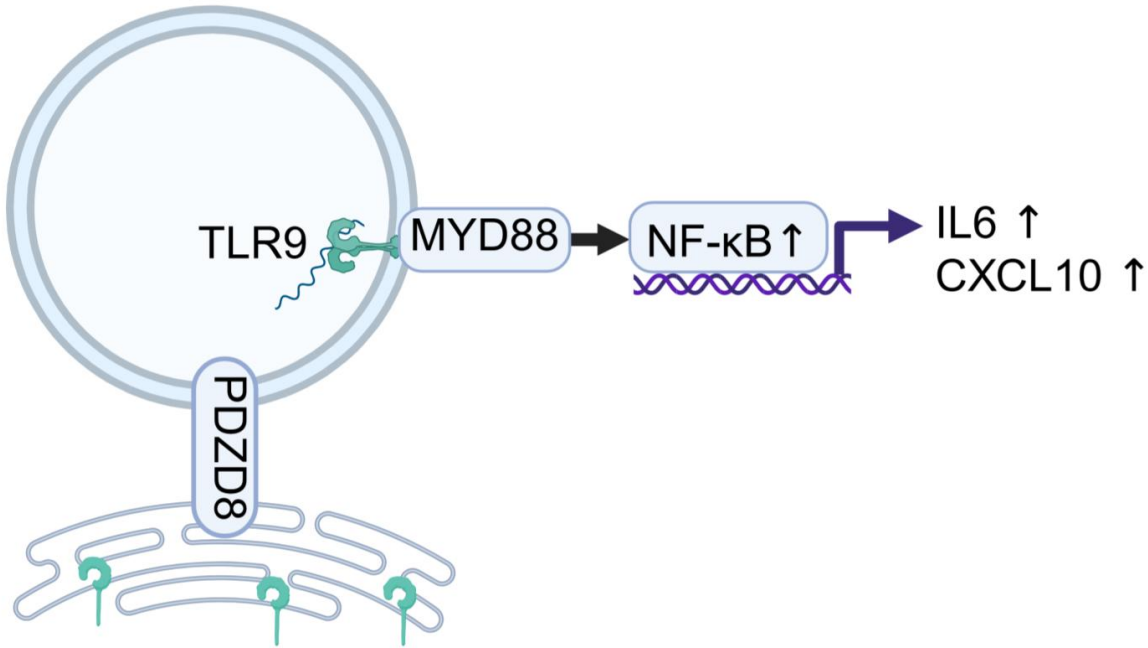


TLR9 KD suppresses NF- κ B downstream cytokines in PT cells

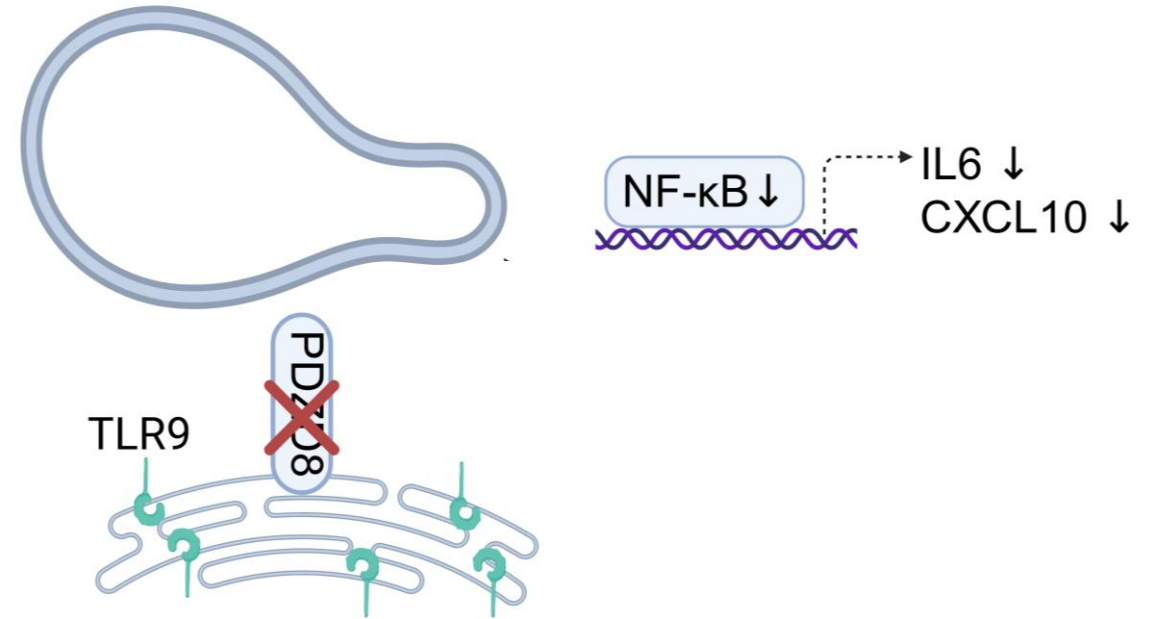


Summary

Cisplatin - WT



Cisplatin - PDZD8 KO



CONCLUSION

PDZD8 deficiency protects against cisplatin-induced AKI and reduces NF-κB-mediated inflammation.

It impairs endolysosomal maturation, which attenuates TLR9 translocation to endolysosomes and TLR9–NF-κB signaling.

Acknowledgements



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