



Loss of PTPN2 in myeloid cells aggravates colitis but protects from colorectal tumor formation

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The authors declare no conflict of interest

Protein tyrosine phosphatase non-receptor type 2

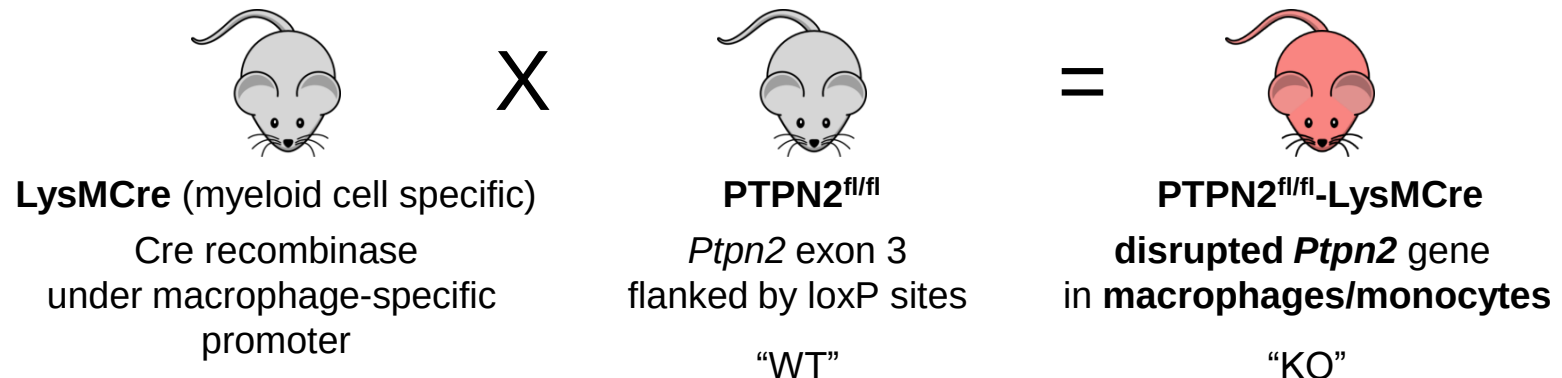
- genetic variants associated with **increased risk** for IBD
- **ubiquitously** expressed
- **de-activates pro-inflammatory mediators** i.e. STAT, MAPK
- PTPN2 knock-out mice: **severe** systemic **inflammation** with signs of colitis, die within few weeks

How does loss of PTPN2 in macrophages/monocytes



❖ influence intestinal inflammation?

❖ affect colitis associated tumor development?

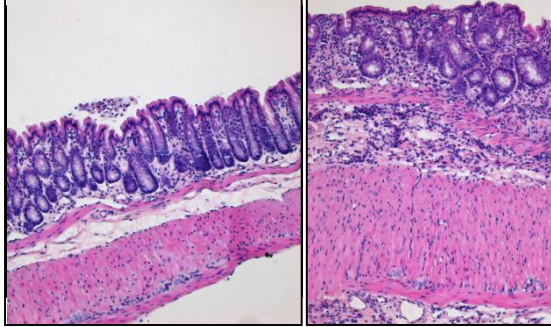


Enhanced col

re mice

WT H₂O

WT DSS

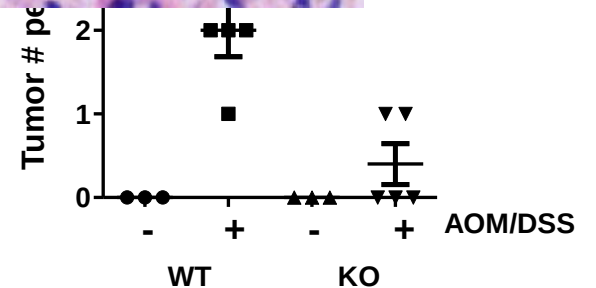
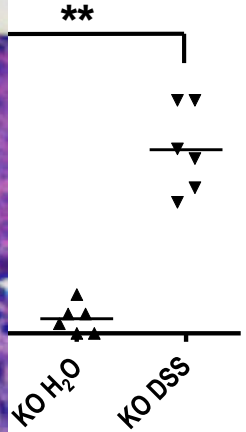
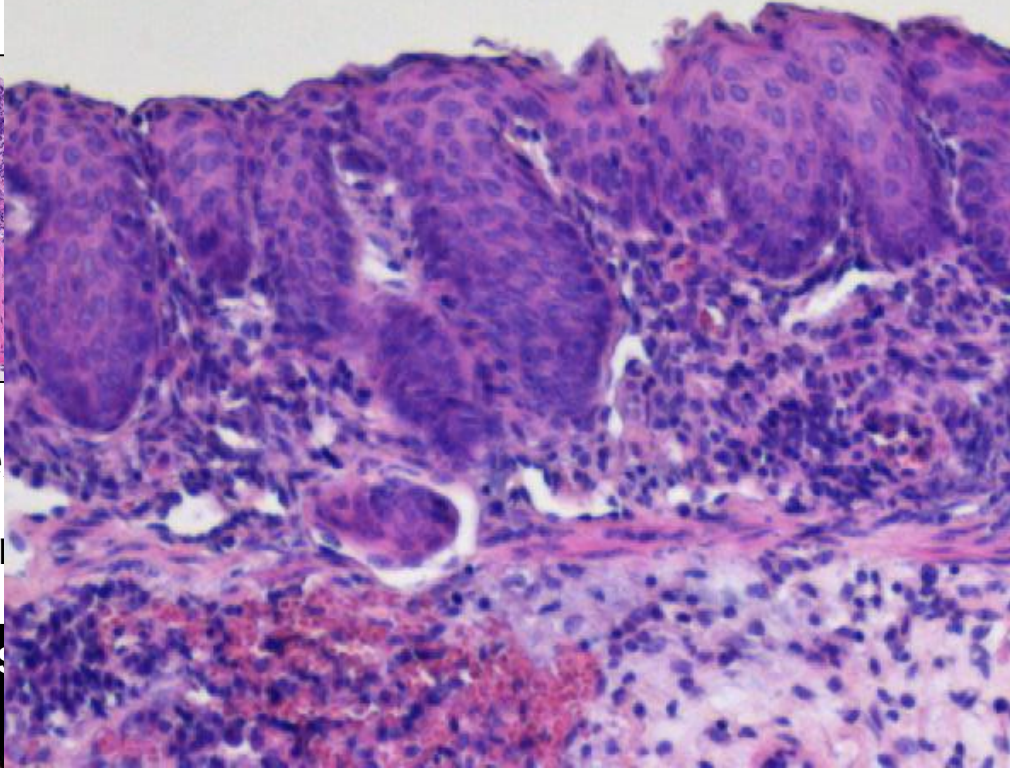
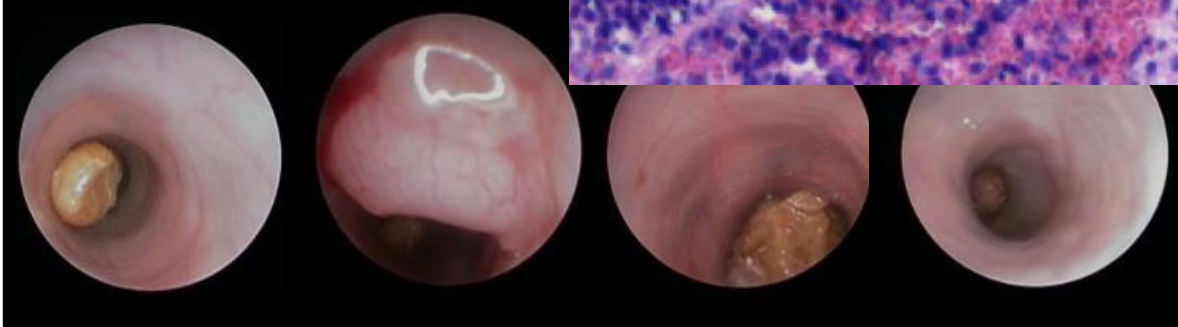


Enhanced **colitis** and e

→ is this a **preca**

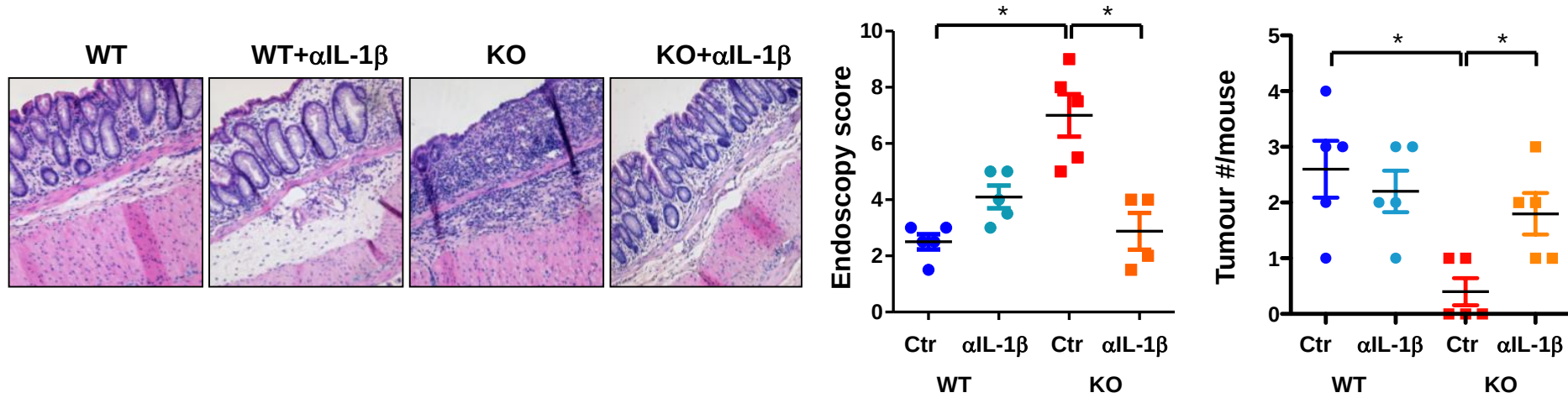
WT H₂O

WT AOM/DSS

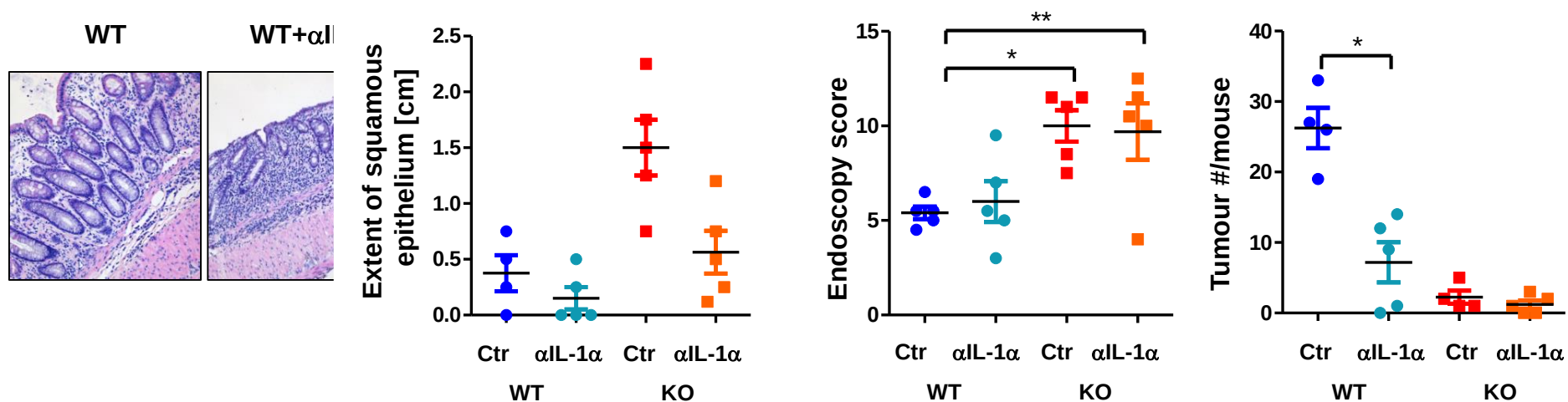


Reduced tumor load in PTPN2-LysMCre mice

Inhibition of IL-1 β reverses the colitis phenotype



Inhibition of IL-1 α reduces tumour formation



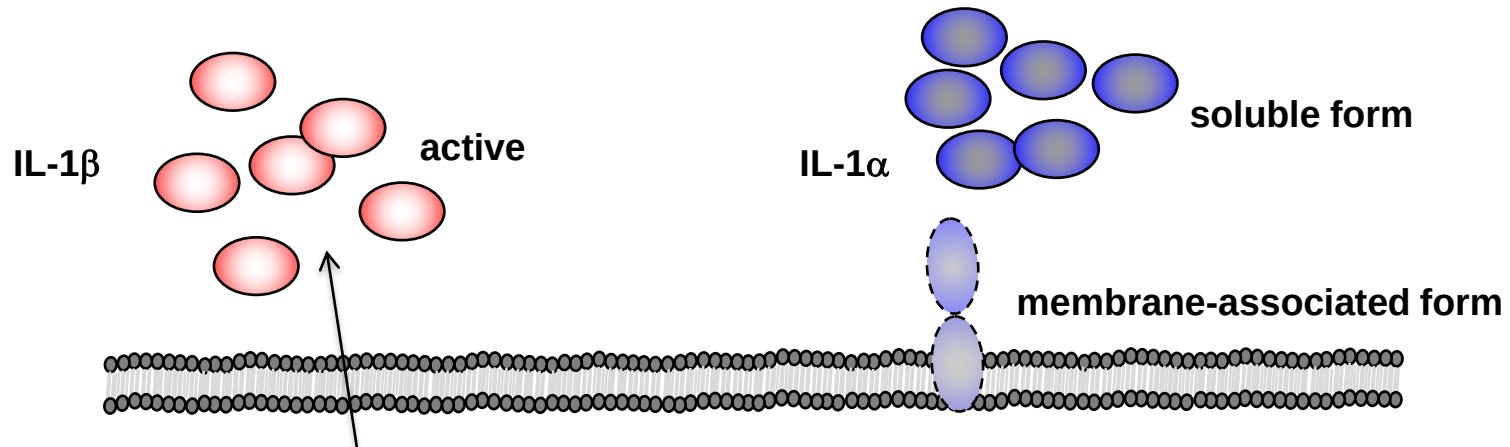
Summary: loss of PTPN2 in myeloid cells...

...promotes IL-1 β secretion

...enhances serum IL-1 α

promotes intestinal inflammation
protects from tumor formation

epithelial transformation



**PTPN2 in myeloid cells controls intestinal homeostasis
via controlling adequate IL-1 α and IL-1 β levels**

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