



The knockout of aldose reductase accelerates liver regeneration through AMPK/SIRT1/ PGC-1 α network

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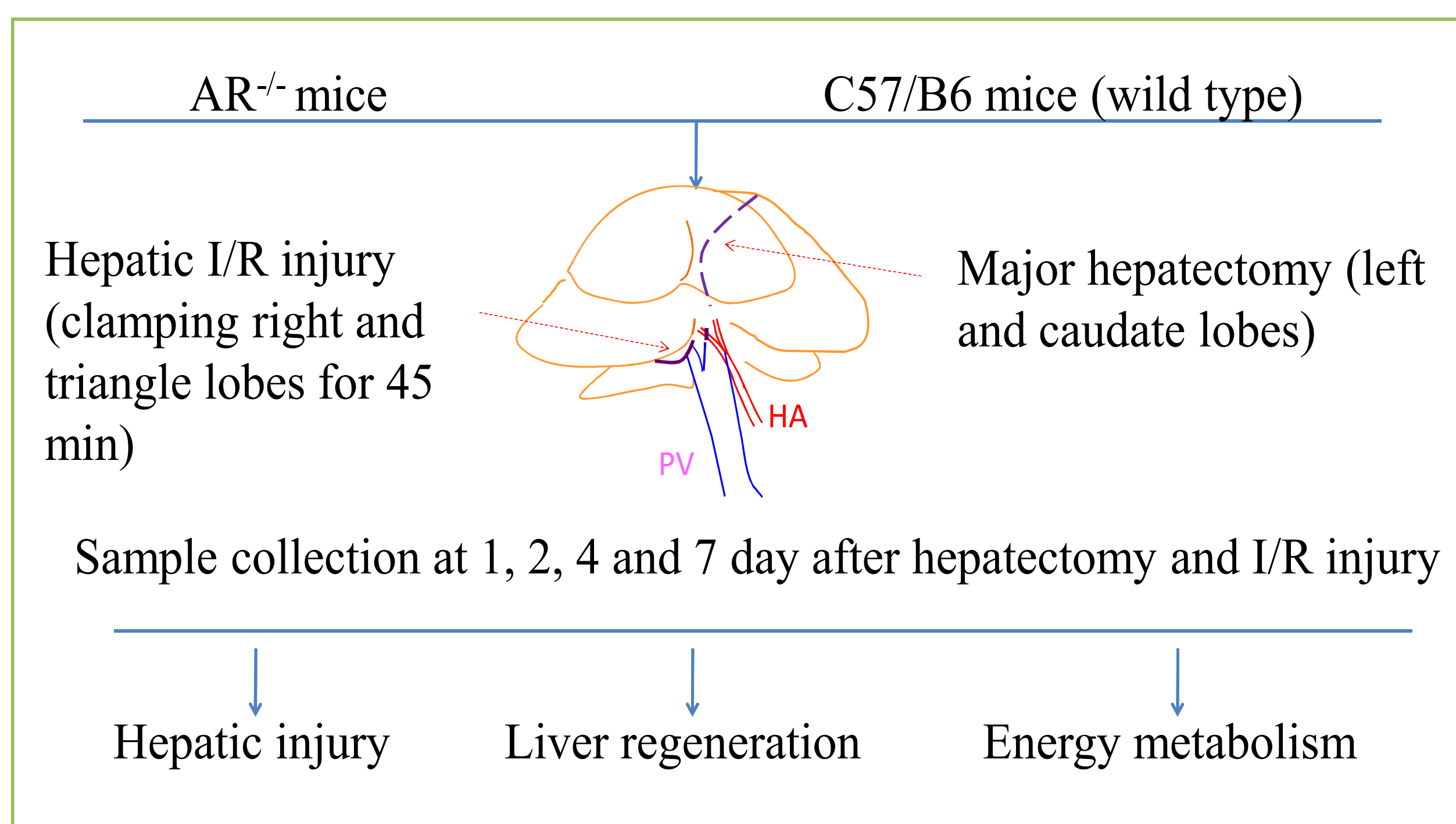
Backgrounds

- ◆ Impaired of liver regeneration severe affects the tissue repair following liver surgery
- ◆ Aldose reductase (AR) was an important mediator in inflammatory response and energy metabolism
- ◆ We recently also showed that the knockout of AR attenuated liver graft injury through decreasing inflammatory response

Objectives

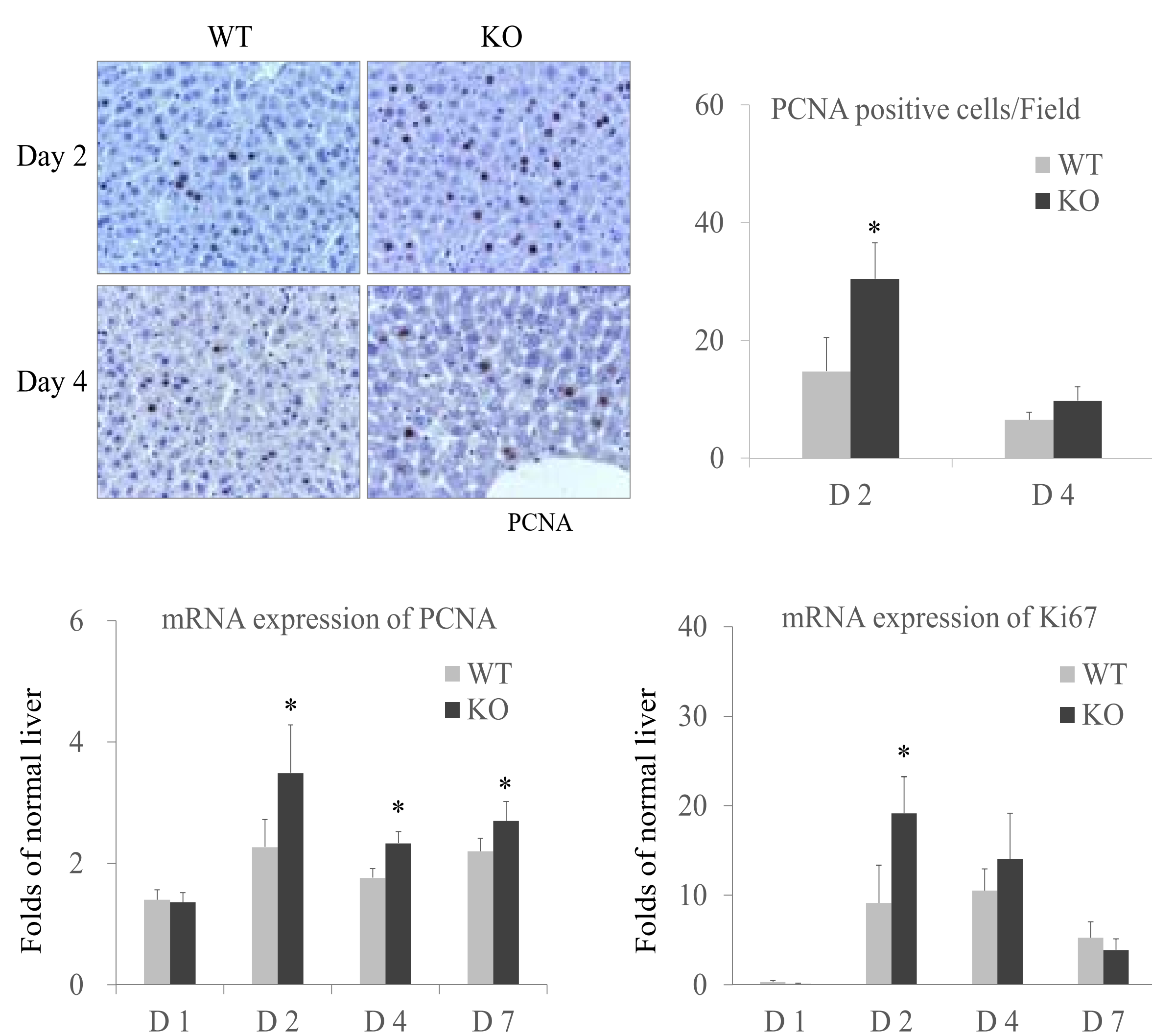
- To investigate the role of AR in liver regeneration
- To investigate the underlying mechanism of AR in liver regeneration

Study design

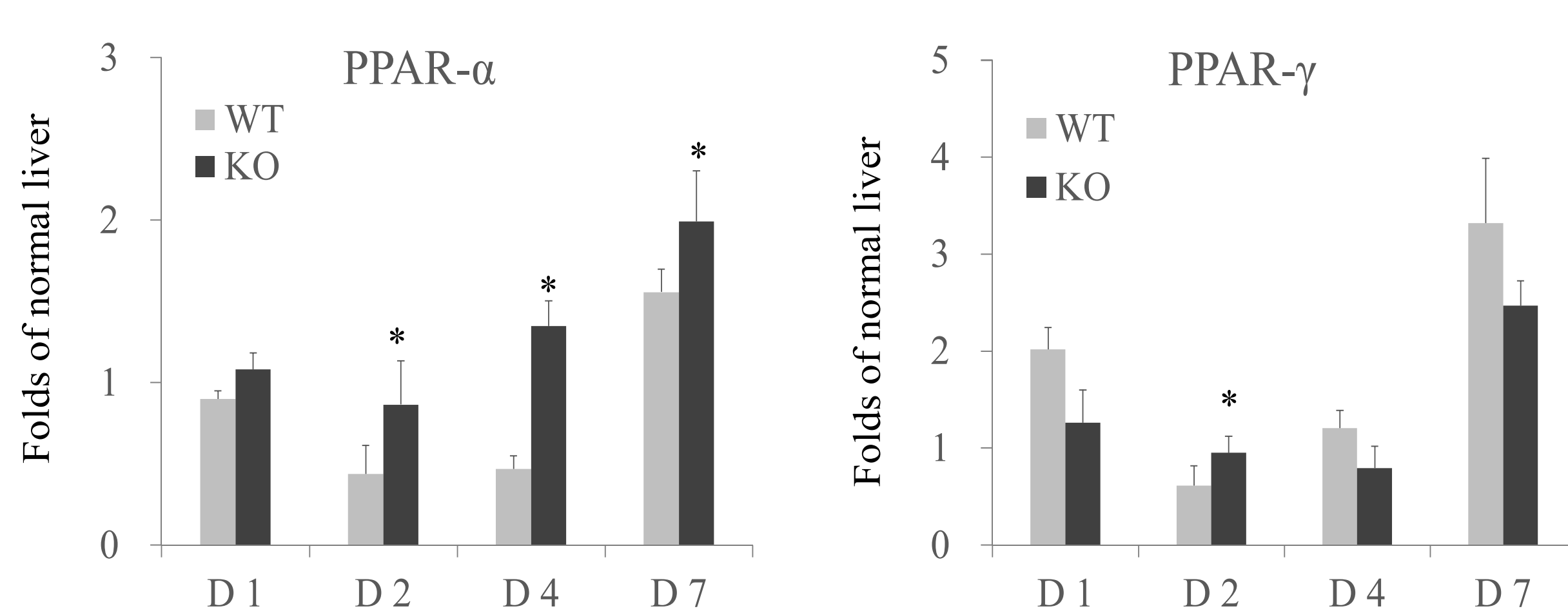


Results

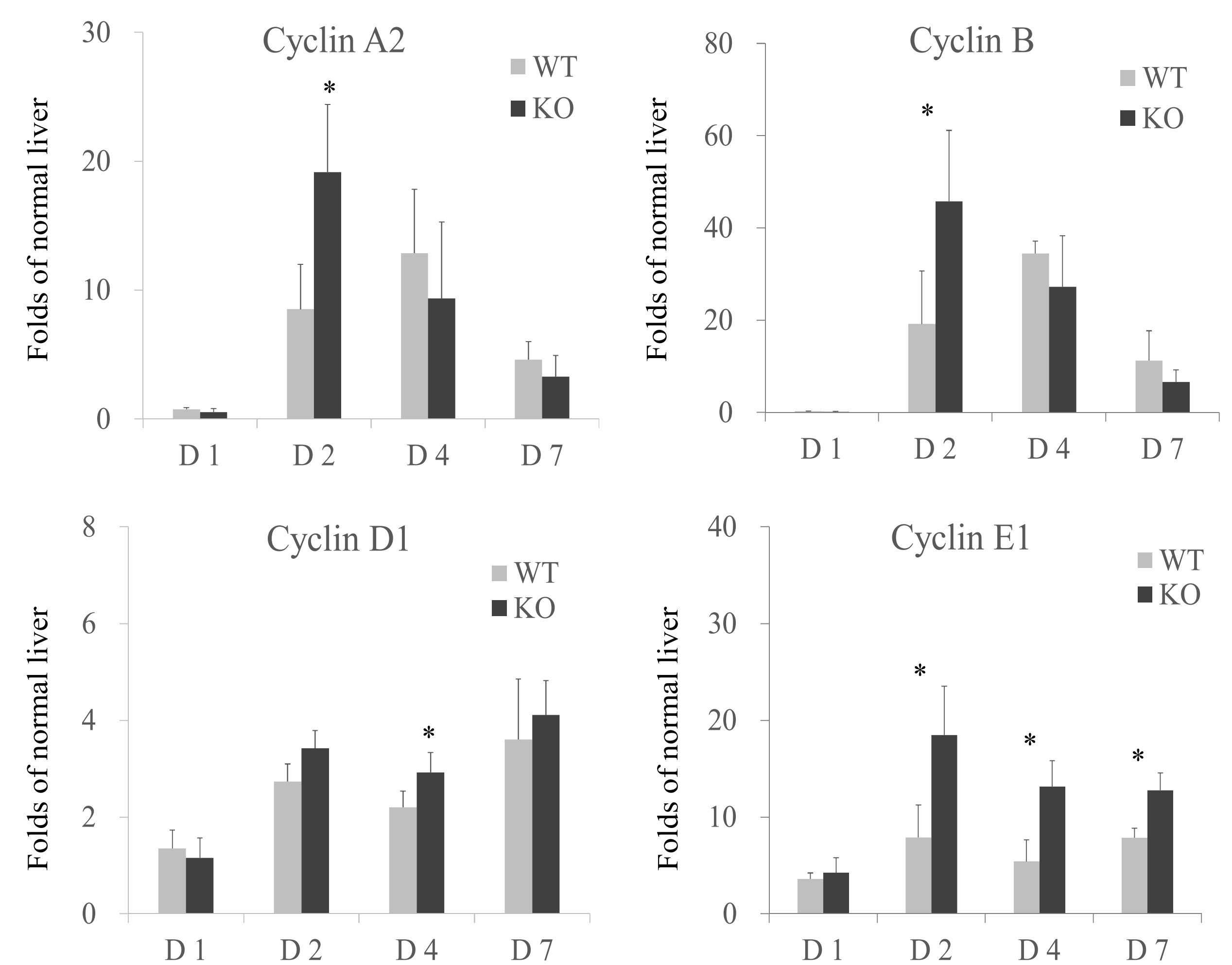
1. The knockout of AR accelerated liver regeneration after major hepatectomy and I/R injury



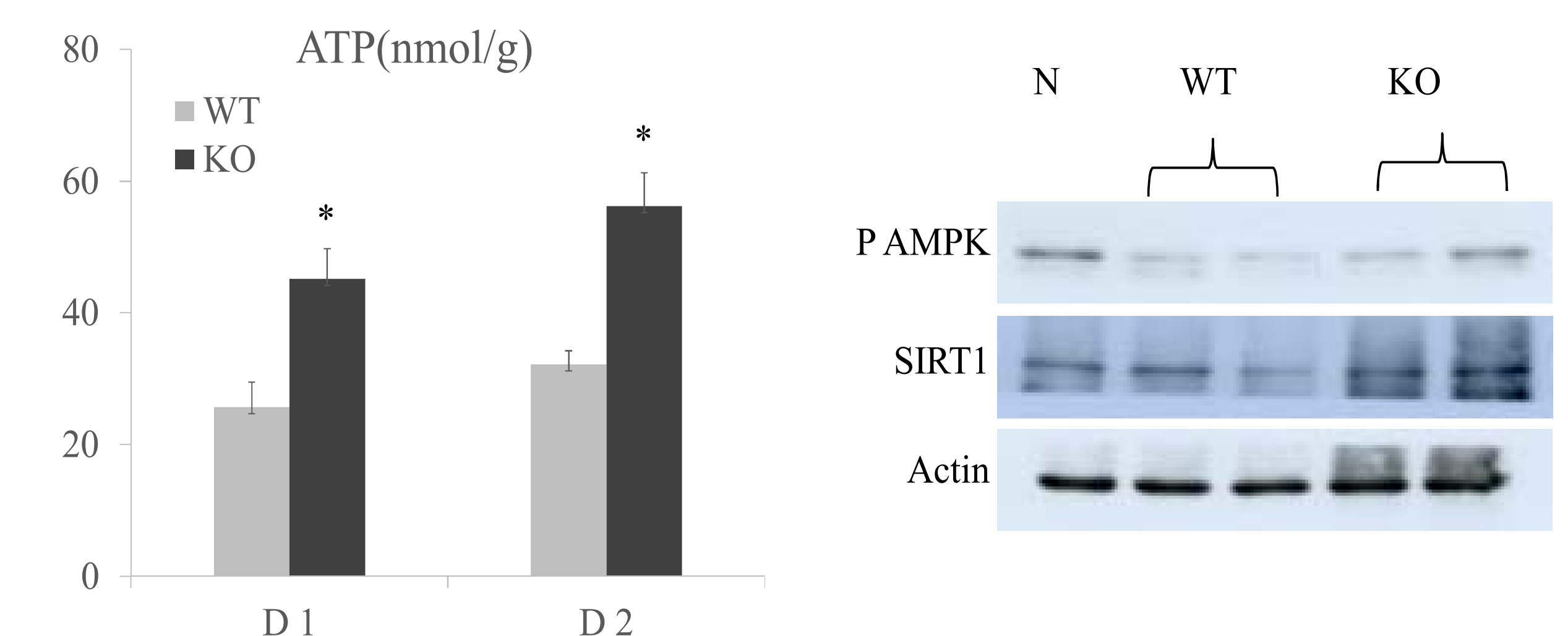
2. The knockout of AR increased PPARs expression after major hepatectomy and I/R injury



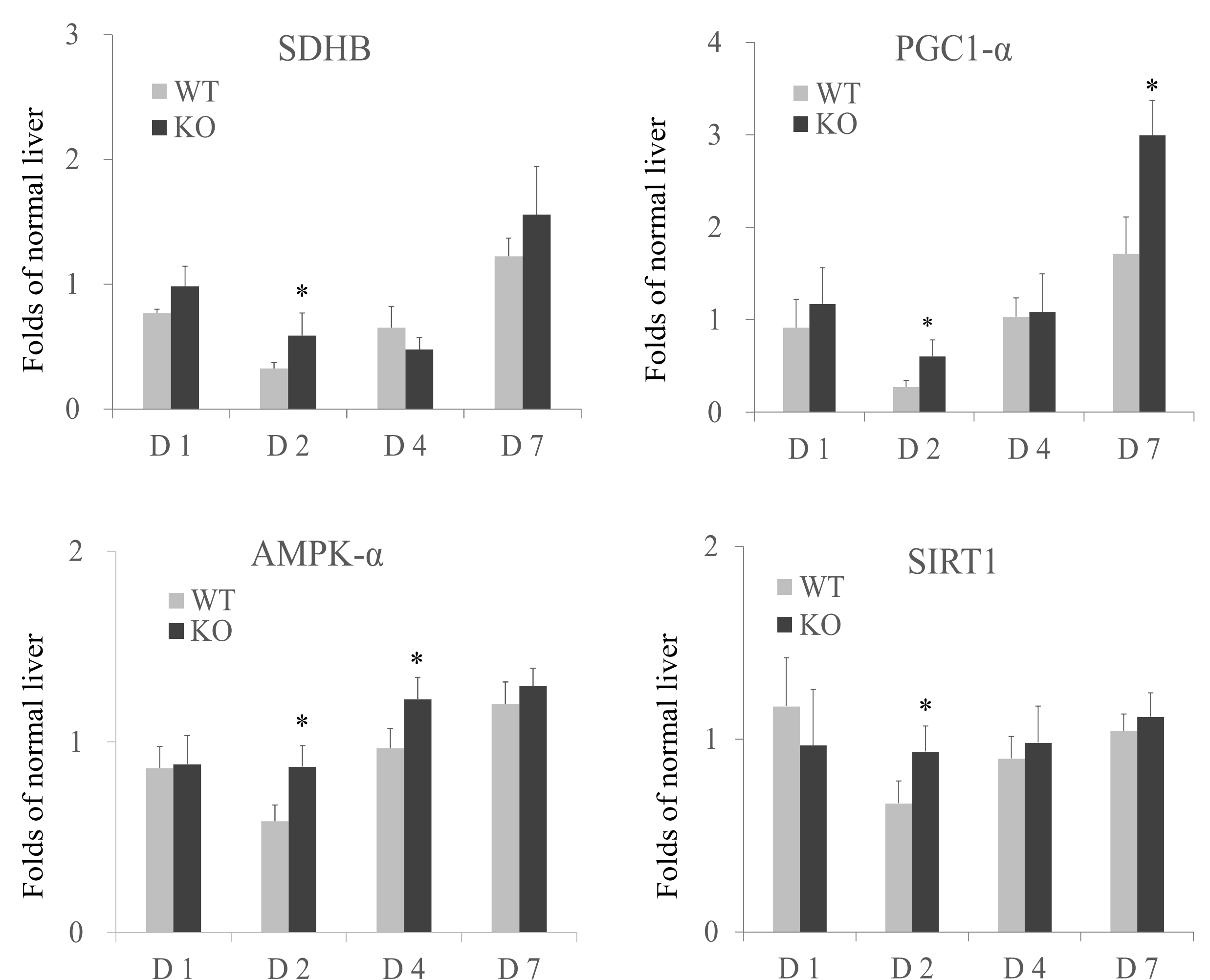
3. The knockout of AR increased the expressions of cyclin A2, B, D1, E1 after major hepatectomy and I/R injury



4. The knockout of AR also increased the ATP level after major hepatectomy and I/R injury



5. The knockout of AR increased the expressions of AMPK/SIRT1/ PGC-1 α after major hepatectomy and I/R injury



Conclusions

- The knockout of AR accelerated liver regeneration after major hepatectomy and I/R injury
- The knockout of AR accelerated liver regeneration through the regulation of energy metabolism by AMPK/SIRT1/ PGC-1 α network.

There are no conflict of interest to other organizations

