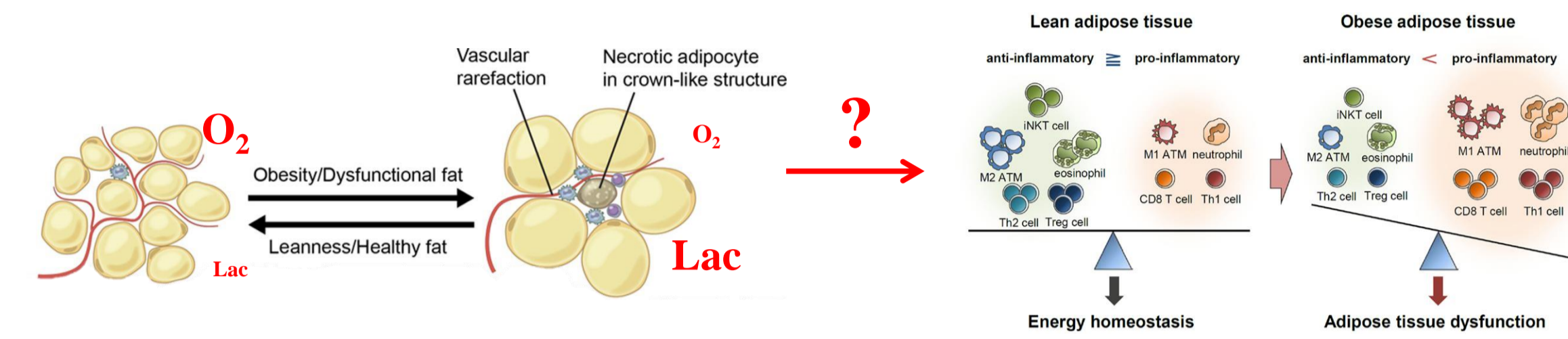


The role of lactate in adipose tissue inflammation

Tianshi Feng, Aimin Xu and Xiaoyan Hui
Department of Medicine, The University of Hong Kong, Hong Kong

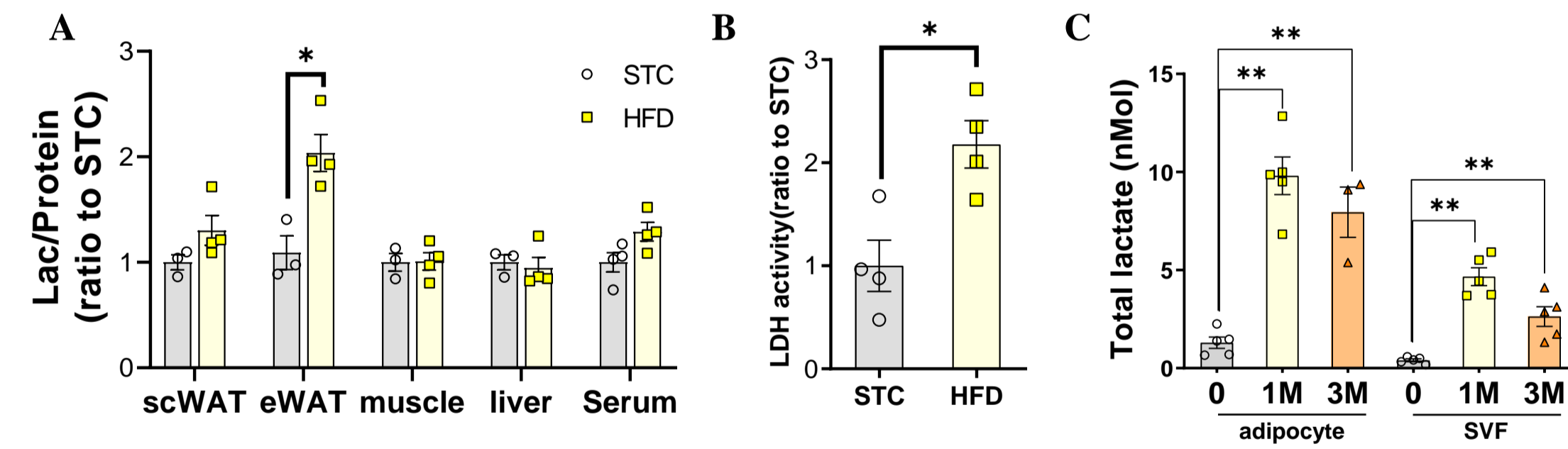
Introduction



- Obesity induces adipose tissue hypoxia and lactate accumulation.
- Obesity induced inflammation aggravates adipose tissue dysfunction.
- The relationship of lactate and adipose tissue inflammation is unclear.

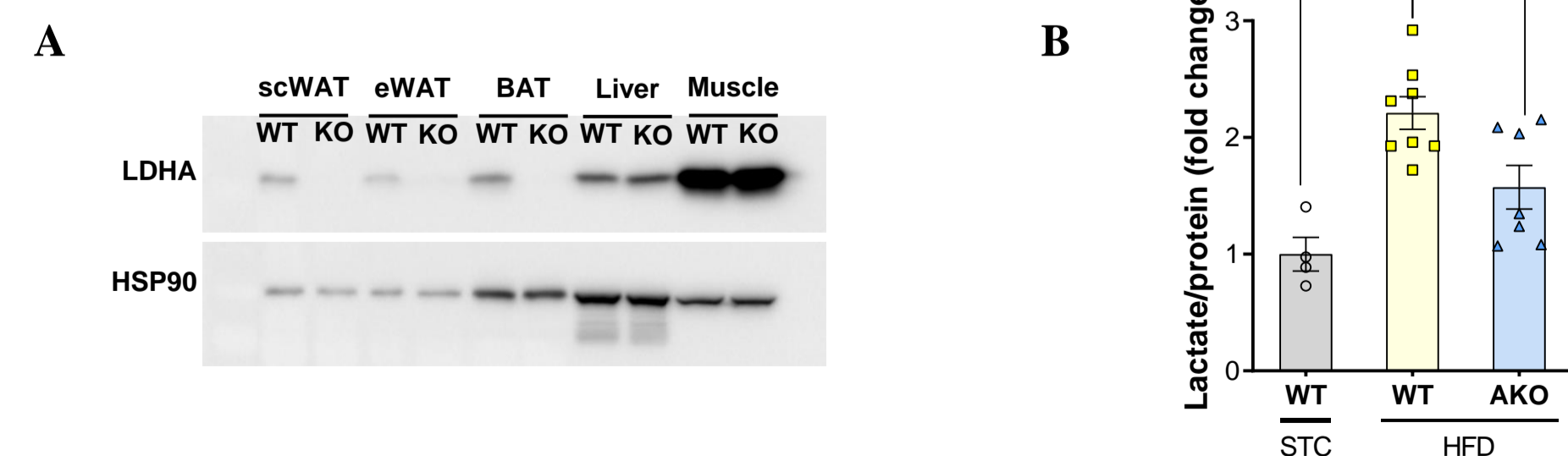
Results

1. Lactate was accumulated in obese white adipose tissue

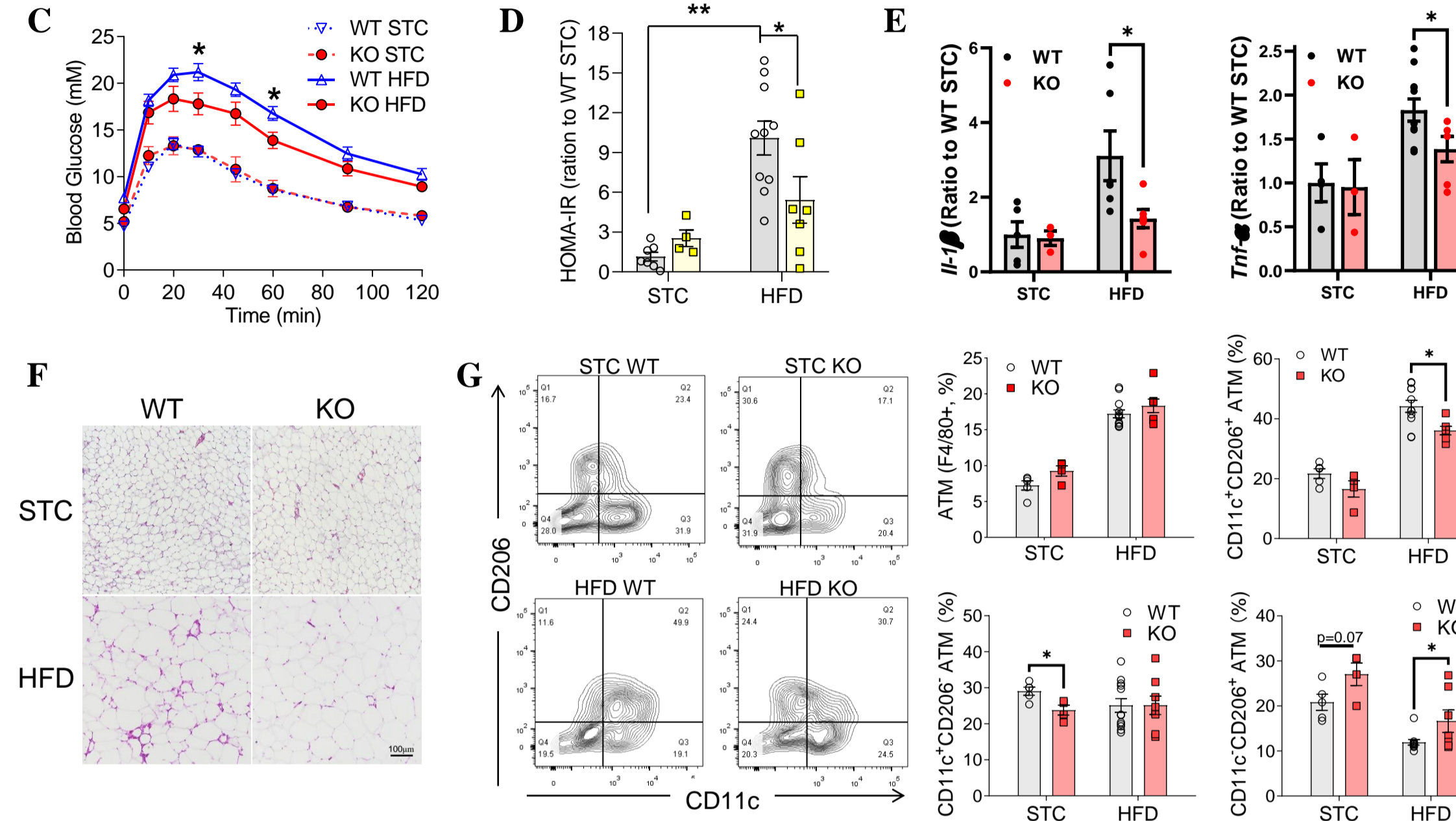


A: Lactate in different tissues. B: LDH activity in eWAT. C: Lactate in adipocytes and SVF after HFD 1 and 3 months.

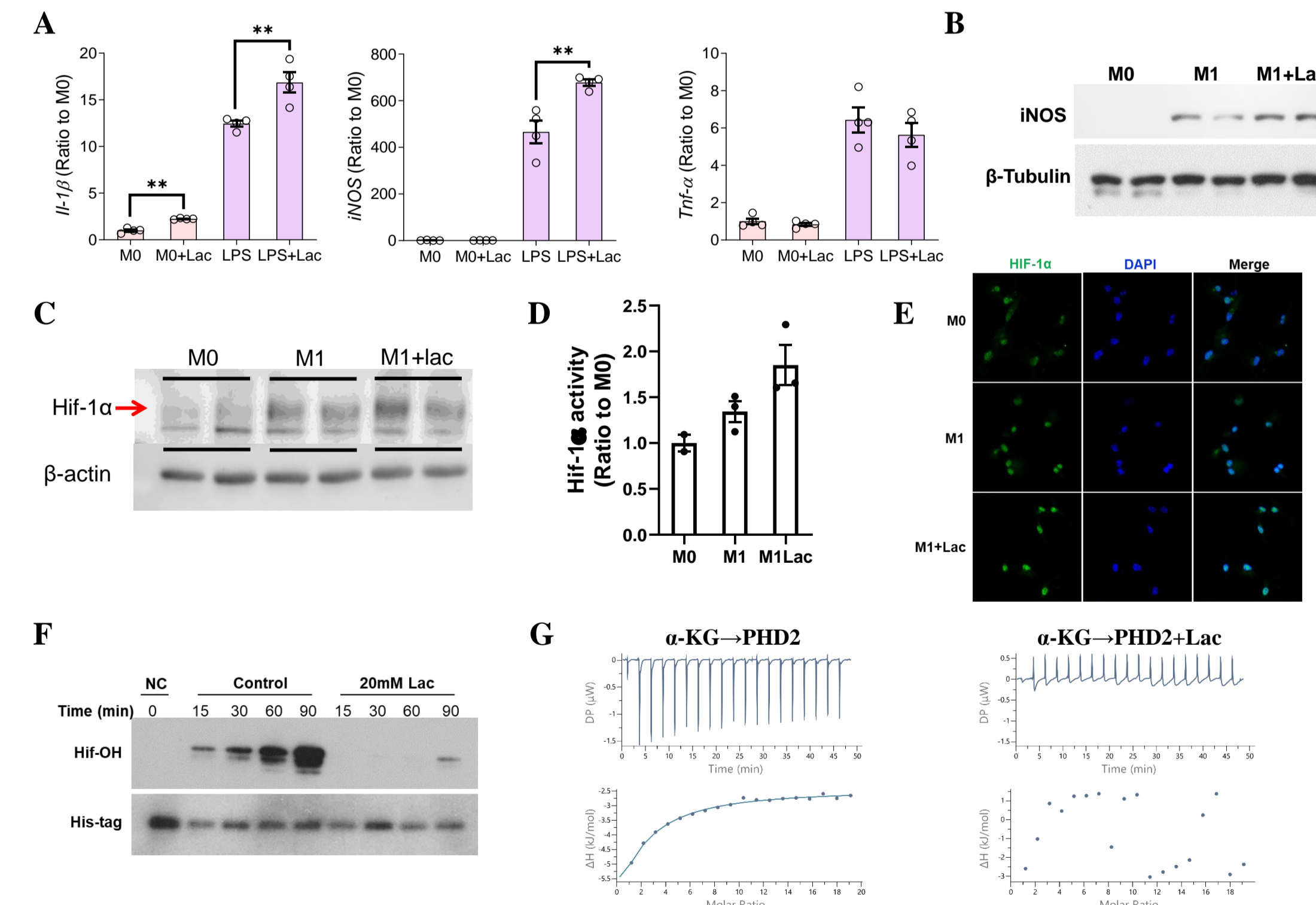
2. Adipocyte specific LDHA depletion alleviated adipose tissue dysfunction and inflammation



A & B: Validation of adipocyte specific LDHA KO efficiency. C: GTT of WT and KO mice after HFD. D: HOMA-IR of WT and KO mice. E: Inflammatory markers in eWAT. F: HE staining of eWAT. G: Flowcytometry of macrophages in eWAT.

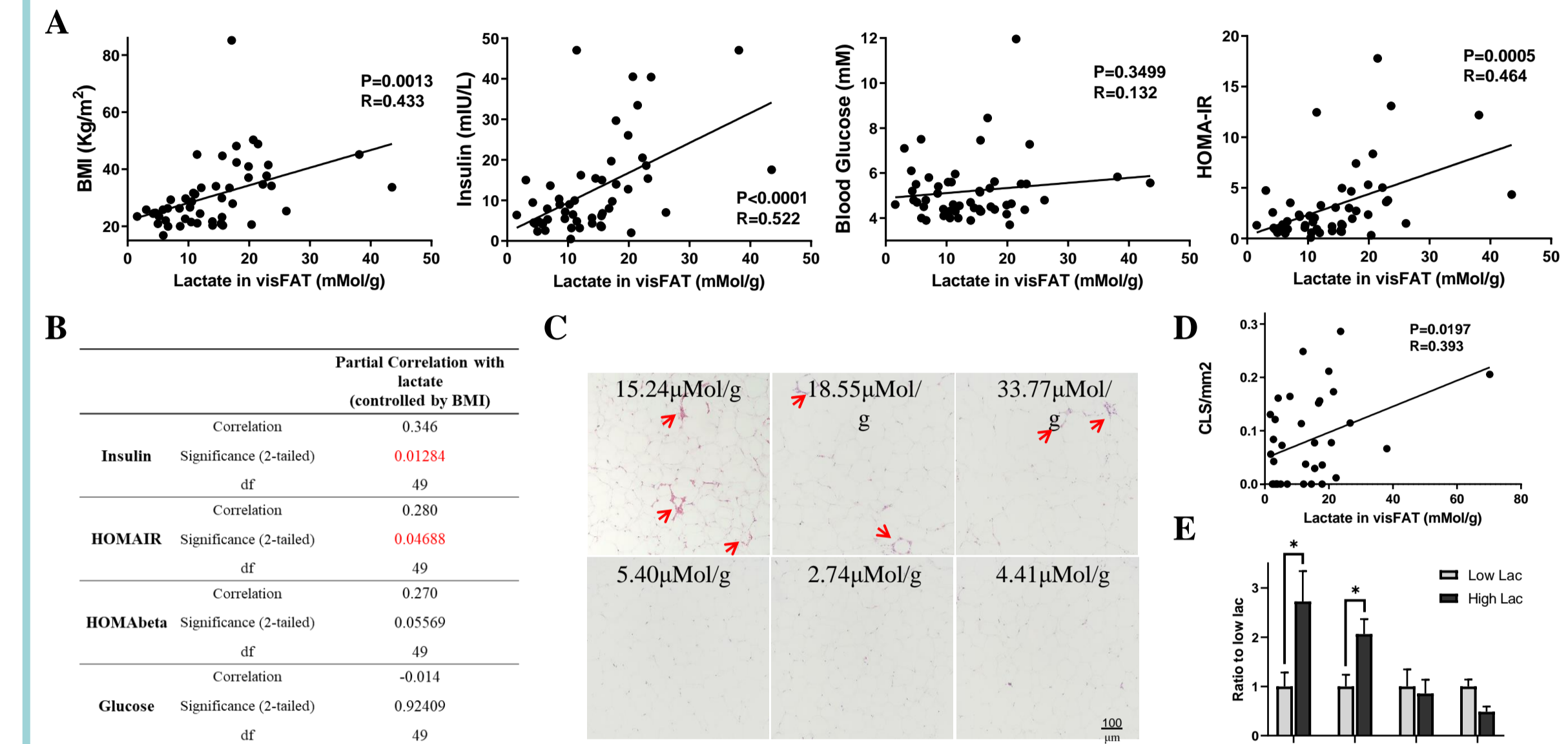


3. Lactate promoted macrophage proinflammatory polarization by inhibiting PHD2 and stabilizing Hif1α



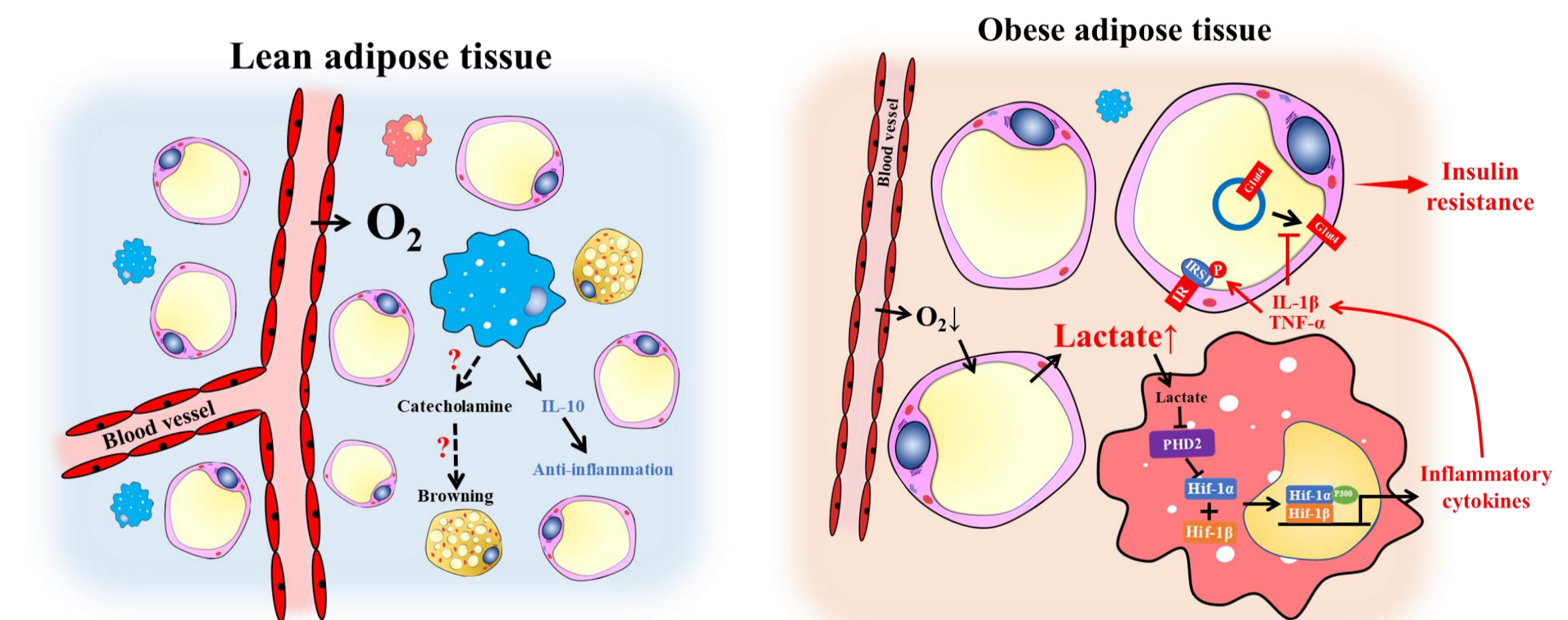
A & B: Inflammatory makers of macrophage after lactate treatment. C: Western-blotting of Hif1α. D: Activity assay of Hif1α. E: IF of Hif1α. F: Activity assay of PHD2. G: ITC assay of PHD2 binding with different ligands.

4. Visceral fat lactate level was positively associated to insulin resistance and adipose tissue inflammation in human



A & B: Correlation and partial correlation of lactate and metabolic parameters. C: HE staining of High-lac and Low-lac visceral fat. D: Correlation of lactate and the CLS in visceral fat. E: Proinflammatory markers in High-lac and Low-lac visceral fat.

Discussion



Acknowledgement

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