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Summary

PD-1 DEFICIENCY SHAPES MACROPHAGE FUNCTION AND PROTECTS MICE FROM POSTOPERATIVE ILEUS

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PD-1 signaling promotes postoperative ileus development in mice by regulating monocyte-derived macrophage infiltration, phagocytosis, and inflammation-mediated neuronal loss.

KEY POINTS

- PD-1 knockout and PD-L1 knockout mice, but not PD-L2 knockout mice, were protected from postoperative ileus following surgical intestinal manipulation
- PD-1 deficient mice showed 50% reduction in monocyte-derived macrophage infiltration and reduced inflammation-mediated neuronal loss compared to wildtype mice
- Resident macrophages and monocyte-derived macrophages were identified as the primary cellular sources of PD-1 in postoperative ileus
- PD-1 deficient monocyte-derived macrophages exhibited reduced in vivo and in vitro phagocytosis and showed altered metabolic gene expression with increased oxidative ATP generation during LPS stimulation
- This experimental study in mice suggests PD-1 signaling may represent a potential therapeutic target for preventing postoperative ileus

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