

ABROGATION OF SERINE METABOLISM EXACERBATES INTESTINAL EPITHELIAL INFLAMMATION VIA C/EBP β -NF- κ B PATHWAY

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Poster

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PHGDH-mediated serine metabolism regulates intestinal inflammation in IBD, with complete serine pathway blockade dramatically enhancing inflammatory responses via the C/EBP β -NF- κ B axis.

KEY POINTS

- Upregulated PHGDH expression was observed in IBD patients and showed a strong association with disease severity in clinical cohorts and the DSS colitis model.
- Complete blockade of the serine pathway using serine deprivation and the PHGDH inhibitor BI-4916 resulted in dramatically enhanced inflammatory signatures upon LPS treatment and impaired mitochondrial function.
- C/EBP β was identified as the critical regulator mediating cellular inflammation under total serine starvation via the NF- κ B pathway, based on RNA sequencing and proteomic analyses.
- The study demonstrates that disruption of serine metabolism accelerates intestinal inflammation via the C/EBP β -NF- κ B axis under ER stress conditions.
- This work is relevant to researchers investigating metabolic regulation of intestinal inflammation and potential therapeutic targets in IBD pathophysiology.

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