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Summary

TACROLIMUS OPTIMIZES OXIDATIVE METABOLISM OF COLONOCYTES IN EXPERIMENTAL COLITIS

LING LIU

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Tacrolimus improved oxidative metabolism in colonocytes and partially restored epithelial hypoxia in a mouse model of DSS-induced colitis, effects that may be mediated through iNOS inhibition.

KEY POINTS

- In DSS-induced colitis mice, tacrolimus treatment partially restored colonic epithelial hypoxia that had been significantly disrupted by colitis.
- Tacrolimus downregulated iNOS expression at both mRNA and protein levels, which was upregulated by DSS; combined treatment with tacrolimus and the selective iNOS inhibitor aminoguanidine achieved better remission in weight loss, colonic shortening, and histopathological changes than tacrolimus alone.
- In vitro studies using Caco-2 cells showed that tacrolimus significantly enhanced oxygen consumption, ATP production, and spare respiratory capacity.
- The authors conclude that tacrolimus improved oxidative metabolism of colonocytes in experimental colitis and that this effect may be associated with iNOS inhibition and could contribute to tacrolimus-induced alterations in gut microbiota.

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