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Summary

SKELETAL MUSCLE DUPD1 LINKS COLITIS WITH OBESITY-ASSOCIATED METABOLIC DISEASES

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A mouse model study identifies DUPD1, a skeletal muscle phosphatase, as a link between inflammatory bowel disease and obesity-associated metabolic diseases through modulation of autophagy.

KEY POINTS

- Dupd1 knockout mice were protected from multiple forms of experimental colitis, colitis-associated colon cancer, high fat diet-induced obesity, fatty liver disease, and glucose intolerance.
- DUPD1 is highly expressed in skeletal muscle and exerts its colitogenic effects from skeletal muscle through modulation of autophagy, a pathway whose dysfunction is known to play a role in IBD.
- A dual specificity phosphatase inhibitor NSC-663284 inhibited DUPD1 enzyme activity and reduced DSS-induced colitis in wild type mice but not in Dupd1 knockout mice.
- The authors suggest that Dupd1 is a new therapeutic target in IBD and obesity-associated metabolic diseases, though the precise mechanisms underlying the known associations between these conditions remain incompletely understood.

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