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SCD1 negatively regulates autophagy-induced cell death in human hepatocellular carcinoma through inactivation of the AMPK signaling pathway

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Highlights

1. Increased SCD1 expression is correlated with poor prognosis of HCC patients
2. HCC patients with autophagy defect exhibits adverse clinic outcomes
3. Inhibition of SCD1 impairs cell proliferation and induces apoptosis and autophagy in human HCC cells
4. The human HCC cell death triggered by inhibition of SCD1 is partly involved in autophagy-induced apoptosis through AMPK activation

Abstract

Stearoyl-CoA desaturase 1 (SCD1) is a key regulator in the mechanisms of cell proliferation, survival and transformation to cancer, and autophagy also plays a critical role in hepatocellular carcinoma (HCC). However, whether SCD1 mediates autophagy in HCC remains unknown. In this study, we observed significantly elevated SCD1 expression levels and evident suppression of autophagy in HCC, and the positive SCD1 expression and autophagy defect were independently correlated