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Betaine chemistry, roles, and potential use in liver disease

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Running header: Betaine and liver disease

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**Abbreviations**

ALD, alcoholic liver disease. AMPK, AMP-activated protein kinase. BGT1, Na<sup>+</sup>/Cl<sup>-</sup>-dependent betaine-GABA transporter. BHMT, betaine-homocysteine methyltransferase. DMG, dimethylglycine. NAFLD, non-alcoholic fatty liver disease. NASH, non-alcoholic steatohepatitis. OCTN2, organic cation/carnitine transporter. SAH, S-adenosylhomocysteine. SAM, S-adenosylmethionine. SIT1, Na<sup>+</sup>-dependent imino acid transporter. SNAT, Na<sup>+</sup>-dependent neutral amino acid transporter.

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