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Progress of antibody–drug conjugates (ADCs) targeting c–Met in cancer therapy; insights from clinical and preclinical studies

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Abstract

The cell-surface receptor tyrosine kinase c-mesenchymal-epithelial transition factor (c-Met) is overexpressed in a wide range of solid tumors, making it an appropriate target antigen for the development of anticancer therapeutics. Various antitumor c-Met-targeting therapies (including monoclonal antibodies [mAbs] and tyrosine kinases) have been developed for the treatment of c-Met-overexpressing tumors, most of which have so far failed to enter the clinic because of their efficacy and complications. Antibody-drug conjugates (ADCs), a new emerging class of cancer therapeutic agents that harness the target specificity of mAbs to deliver highly potent small molecules to the tumor with the minimal damage to normal cells, could be an attractive therapeutic approach to circumvent these limitations in patients with c-Met-overexpressing tumors. Of great note, there are currently nine c-Met-targeting ADCs being examined in different phases of clinical studies as well as eight preclinical studies for treating various solid tumors. The purpose of this study is to present a broad overview of clinical- and preclinical-stage c-Met-targeting ADCs.