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Recent advances in site specific conjugations of antibody drug conjugates

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Antibody-drug conjugates take the advantage of antigen specificity of monoclonal antibodies to deliver highly potent cytotoxic drugs selectively to antigen-expressing tumor cells.

The recent approval of Adcetris and Kadcyla as well as emerging data from numerous ongoing clinical trials underscore the role of antibody-drug conjugates (ADCs) as a new therapeutic option for cancer patients.

The site-specific conjugation technologies to develop next-generation ADCs have grown rapidly since then and have proven to be robust platform for generating next-generation homogeneous ADCs.

These homogeneous ADCs have exhibited superior properties in terms of stability, manufacturing, and therapeutic index over the conventional ADCs.

Although most ADCs currently in clinical development rely on conventional conjugation chemistries, the first wave of site-specific ADCs has been promoted to clinical trials.

The increased understanding from the clinical investigation of current ADCs and site-specific bio-conjugation technologies has enabled scientists to accelerate the discovery and development of the next generation ADCs with defined and homogeneous compositions.

Ongoing efforts to improve conjugation technologies and understanding

of structure-activity relationship will certainly broaden the role of ADCs and other conjugates for the treatment of cancer and potentially other immuno-mediated diseases.

More information: Wenlong Gao et al, Recent Advances in Site Specific Conjugations of Antibody Drug Conjugates (ADCs), *Current Cancer Drug Targets* (2016). DOI: 10.2174/1568009616666160512144715