How Medicinal Chemistry is Validating the Promise of ADCs as a Suitable Targeted Therapy, Delivering Successful Clinical Programs

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Antibody Drug Conjugates (ADCs) are at the forefront of new technology applications and exploit the specificity of the antibody for targeted delivery of a potent cytotoxic warhead. Whilst simple in concept, ADCs have multiple components and a multi-step mechanism of action with specific requirements for each component and step, and optimizing these aspects in parallel is critical to the success of ADC drug development programs. Recent ADC clinical trials failures can be directly attributed to design issues, highlighting the need to build appropriate linker architectural design into the early stages of the product candidate selection process. Improvements in linker design has been driven by a medicinal chemistry approach with new and novel linker modalities being developed, with several of these entering clinical trials in recent months.

The presentation will incorporate details of suitable ADC drug development advances including strategies to improve therapeutic indices through linker design, chemical linker design strategies to attach novel payloads, modifications to chemical functionalities to optimize bioconjugation efficiencies, and a reduction of ADC safety liabilities through linker payload enhancements.