S31-6 Design and synthesis of a novel class of anti-HIV peptides against drug-resistant strains

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The recent upsurge of successes in recombinant protein-based therapeutics has rekindled an interest in the potential development of biomolecule-derived pharmaceuticals such as peptides and oligonucleotides. In order to accommodate large-scale production for high daily dose requirements, facile access to prepare homogeneous polymeric compounds is needed. Expression by recombinant technology can overcome major drawbacks associated with chemical synthesis of bioactive peptides. Conversely, recombinant peptides from prokaryotes are usually produced without post-translational modifications, which often provide characteristic functions including bioactivity and biostability.

The current work represents the practical methodology to prepare bioactive peptides having two end-capping groups using site-specific cleavage at the methionine or *S*-cyanocysteine site within recombinant proteins. The end-capping moieties can maintain the prolonged effect of peptide therapeutics *in vivo*. In the symposium, design and recombinant preparation of a novel class of HIV-1 fusion inhibitors, that are effective against enfuvirtide-resistant viruses, will be presented.