위치선택적인 알부민 결합을 통한 단백질 의약의 체 내 안정성 증대(Spatially-Controlled Albumin-Conjugation to Therapeutic Proteins for Prolonged Circulation Time In Vivo)

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Proteins are bio-polymers with unique functionalities and have been widely used in diverse biotechnology fields. The advance in recombinant protein techniques enables the production of a large amount of proteins including therapeutic proteins and biocatalysts. In order to design recombinant proteins with novel properties, our research group has been exploring biosynthesis of artificial proteins using non-natural amino acid building blocks. Site-specific incorporation of a non-natural amino acid containing a reactive functional group into a target protein allows site-specific chemical modification of the protein. We employed the combination of the site-specific incorporation of a non-natural amino acid technique and click-chemistry in order to improve pharmacokinetic properties of (therapeutic) proteins. Extending the protein therapeutics serum half-life will significantly enhance the utility of existing protein therapeutics.