S36-3 Development of techniques for the mass production of pharmaceutical peptides using a fusion protein method

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Recombinant DNA technology has contributed to health care by enabling mass production of long-chain peptides with biological activity, such as growth hormone, interferon, and insulin.

With the aim of increasing the productivity of recombinant DNA method for short-chain peptides such as carperitide which is used for acute heart failure, we have investigated the production process using the fusion protein method with *Escherichia coli*. We successfully achieved high efficiency separation process and developed a semisynthetic process by combining multiple enzymes. In this symposium, we report the production method of glucagon-like peptide I (GLP-1) using enzymes, such as Kex2 and OmpT, and the semisynthetic method for ghrelin with an acylated serine residue, which stimulates food intake. In addition, peptide production with engineered enzymes is also introduced.