

## Expression of Stimuli-Responsive Elastin-like Polypeptide

Kyunga Na<sup>1</sup>, Kwangmin Kim<sup>1</sup>, Byungchul Shin<sup>2</sup> and Jinho Hyun<sup>1</sup>

*<sup>1</sup>Department of Biosystems and Biomaterials Science and Engineering  
Seoul national university; <sup>2</sup>Korea Research Institute of Chemical Technology*

Stimuli-responsive elastin-like polypeptide (ELP) was extracted from the cell lysate of E.coli genetically modified and grown in the media. ELP shows reversible inverse phase transition, which is the characteristic chemophysical properties of poly(N-isopropylaminoamide)(p-NIPAAM) responding to the external stimuli such as temperature, salt and Ca ion concentration, and pH changes. The thermal inverse phase transition temperature (Tt) can be varied by changing the peptide sequence as well as molecular weight, and the phase transition between the hydrophobic and the hydrophilic occurred very rapidly within 2°C range as characterized using UV spectrometer. Compared with p-NIPAAM, ELPs expect to have better biocompatibility ensuring application to biomedical engineering.