

[BIO21]

**Biosynthetic production of human growth hormone gene in methylotrophic yeast, *Pichia pastoris***

**Danley Loh, Tengku Sifzizul Tengku Muhammad, Yahya Mat Arip, Nazalan Najimudin, Mohd Razip Samian**

School of Biological Sciences, University Sains Malaysia, 11800 Penang, Malaysia.

E-mail: danley\_loh@yahoo.co.uk

The human growth hormone (hGH) gene was successfully synthesized and expressed in the methylotrophic yeast, *Pichia pastoris*. Twenty oligonucleotides, consisting of 612 base pairs, were designed with *Pichia* preferred codons and assembled by single-step assembly polymerase chain reaction technique. *P. pastoris* transformants were generated by electrotransformation of *Bsp*EI-linearized recombinant pPIC3.5k-hGH plasmid into *Pichia* host strains GS115 via single crossover integration of the expression cassette into *his4* locus. The His<sup>+</sup> Mut<sup>+</sup> recombinant *P. pastoris* strain was screened by direct PCR and induced by methanol. Western blot analysis showed that the recombinant hGH protein was successfully expressed in *P. pastoris*.