

| C1-6 |

Cyclo(Phe-Pro) Modulates the Expression of *ompU* in *Vibrio* spp.

Dae-Kyun Park

Departments of Life Science, Sogang University

Vibrio vulnificus was found to produce a chemical that induced the expression of *V. fischeri lux* genes. Electron spray ionization-mass spectrometry (ESI-MS) and ¹H-nuclear magnetic resonance (NMR) analyses indicated that the compound was cyclo(L-Phe-L-Pro) (cFP). The compound was produced at a maximal level when cell cultures reached the onset of stationary phase. SDS-polyacrylamide gel (PAGE) analysis of the total proteins of *V. vulnificus* indicated that expression of OmpU was enhanced by exogenously added synthetic or purified cFP. A *toxR*-null mutant failed to express *ompU* despite the addition of cFP. The related *Vibrio* spp. *V. cholerae*, *V. parahaemolyticus*, and *V. harveyi* also produced cFP, which induced the expression of their own *ompU* genes. cFP also enhanced the expression in *V. cholerae* of the *ctx* genes, which are known to be regulated by ToxR. Our results suggest that cFP is a signal molecule controlling the expression of genes important for the pathogenicity of *Vibrio* spp.