Synthetic Studies on Ikoamide, a highly *N*-methylated linear lipopeptide

Yung-Han Lo, Keitaro Iwasaki, Arihiro Iwasaki, and Kiyotake Suenaga

Faculty of science and technology, Keio university

Ikoamide was a highly *N*-methylated linear lipopeptide isolated from a marine cyanobacterium collected at Kuroshima Island, Okinawa. Ikoamide shows weak cytotoxicity against HeLa cells (IC_{50} 9.9 μM) and also shows growth inhibitory activity against malaria parasite *plasmodium falciparum* (IC_{50} 0.14 μM). The gross structure was elucidated by spectroscopic analyses, and the absolute configuration was determined by chiral HPLC analyses of acid hydrolysate and synthetic means. Since ikoamide is available a trace amount from natural resources, we began to study on the total synthesis of ikoamide for a supply for further biological tests. Starting from L-tyrosine, L-glutamine, and L-isoleucine, *N,O*-dimethyltyrosine methyl ester, *N*-methylglutamine, and *N*-methylisoleucine were prepared, respectively. Condensations of prepared *N*-methyl amino acids and *O*-tert-butylthreonine provided tetrapeptide. Further condensation reactions are now in progress.

Keyword：Total Synthesis, Ikoamide, *N*-methylated linear lipopeptide