Replacement of Tyrosine-197 and the Corresponding Tyrosine-195 to Isoleucine in *Cephalosporium acremonium* and *Streptomyces clavuligerus* Isopenicillin N Synthase

Paxton Loke and Tiow-Suan Sim*

Department of Microbiology, Faculty of Medicine, National University of Singapore, MD4/4A, 5 Science Drive 2, Singapore 117597. Fax: 65-7766872. E-mail: micsimts@nus.edu.sg

* Author for correspondence and reprint requests

Z. Naturforsch. **56 c,** 806–809 (2001); received March 7/April 10, 2001

Isopenicillin N Synthase, Site-Directed Mutagenesis, Tyrosine

Isopenicillin N synthase (IPNS) is one of the key enzymes in the penicillin and cephalosporin biosynthetic pathway which catalyses the conversion of δ-(L-α-aminoadipyl)-L-cysteinyl-D-valine to isopenicillin N. The IPNS from *Penicillium chrysogenum* 23X-80–269–37–2, a high penicillin V-producer, was found to possess an isoleucine residue instead of tyrosine at position 195. An attempt to increase the specific activity of IPNS from *Cephalosporium acremonium* and *Streptomyces clavuligerus* was undertaken by altering the corresponding tyrosine residue to an isoleucine at the corresponding location. Unfortunately, no apparent increase in specific activity was encountered when the purified mutant enzymes were analysed and thus, this amino acid difference is likely not responsible for high specific activity in IPNS.