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A Study on the Chemistry of a New Antibiotic Aquayamycin

Masaji SEZAKI (瀬 崎 正 次)

The thesis consists of introduction, discussions of four chapters and experimental sections of four chapters.

Studies on the antibiotics were mainly developed in the search of antimicrobial substances, but wide varieties of chemical structure of antibiotics suggest presence of further biological activities. As might be expected, recently discovered various types of antibiotics inhibiting specific enzyme activity. In this respect, the author undertook a systematic study of tyrosine hydroxylase inhibitor of *Actinomycetes* origin, and isolated a novel potent inhibitor named aquayamycin.

It is thought that inhibitor of tyrosine hydroxylase involved in norepinephrine biosynthesis would be useful for analysis of this amine in hypertensive diseases.

Thus, the author studied production of aquayamycin by fermentation, isolation by solvent extraction, purification to obtain crystalline aquayamycin, and confirmed its unique chemical structure. The studies on chemical structure of aquayamycin was mainly carried out by application of spectroscopic analyses such as NMR, IR, and UV spectra of its derivatives of chemical and photochemical reactions.

The author considers that this study contributes a new approach to enzyme inhibitor and a development of chemistry of antibiotic.