

PHOTOCHEMICAL METHOD FOR THE INTRODUCTION OF CARBON UNITS TO HETERO-
AROMATICS INVOLVING AN ENONE FUNCTION IN THEIR RING SYSTEM

Chikara Kaneko, Toshihiko Naito, Yū Momose, and Naoyuki Shimomura

Faculty of Pharmaceutical Sciences, Kanazawa University,

Takara-machi, Kanazawa 920, Japan

Using photo 2+2 adducts obtained from heteroaromatics involving an enone function in their ring system and olefin as key intermediates, novel methods for the introduction of carbon units to these heteroaromatics have been elaborated. Among four possible C-C bond fissions (a-d) in the four-membered ring compounds (A,B), three of them (a, b, and d) can be utilized in these methods. These methods are illustrated using 2-pyridones. Thus, the fission a provides the method of annulation of the heteroaromatics (1,2). The fission d can be utilized for the introduction of a carbon unit at the 3-position. The heteroaromatics having a carbon unit at the 4-position can be synthesized via the fission b.

Some typical examples of these methods using a variety of heteroaromatics, as well as their application for the syntheses of quinolone alkaloids (1 and 2), are described.

