Quinolone antibacterials: A new class of photochemical carcinogens

Markus Mäkinen, P. Donald Forbes, Frej Stenbäck

Abstract

Hairless mice were exposed orally to antibiotics of the fluoroquinolone group alone and in combination with irradiation with UVA over an extended period of time to determine the possible skin carcinogenicity in comparison with that with 8-methoxypsoralen, i.e. a known photochemical skin carcinogen. Animals exposed to UVA and fleroxacin, ciprofloxacin, nalidixic acid and ofloxacin exhibited an increase in the number of benign skin tumors when compared with animals exposed to UVA alone. Animals exposed to lomefloxacin and UVA exhibited a specific type of neoplastic progression. In addition to benign papillomas and solar keratoses, a number of cystic squamous cell carcinomas were observed. In the positive control group, which was given 8-methoxypsoralen and UVA, a number of papillomas and superficial squamous cell carcinomas were found. In animals exposed to UVA alone, only a few benign tumors were seen; in unexposed animals, no cutaneous neoplasms were observed. It is concluded that fluoroquinolones warrant further study, because they have potential photocarcinogenic properties.

Author Keywords

Quinolone antibacterials; Photochemical carcinogens

Corresponding author.

Copyright © 1997 Published by Elsevier B.V.
Quinolone antibacterials: A new class of photochemical carcinogens