

Answer 1:

Bibliographic Information

Preclinical evaluation of aromatase inhibitors antitumor activity. Auvray P; Bichat F; Genne P Oncodesign Biotechnology, Parc technologique de la Toison-d'Or, 28, rue de Broglie, 21000 Dijon, France Bulletin du cancer (2000), 87 Spec No 7-22. Journal code: 0072416. ISSN:0007-4551. (ENGLISH ABSTRACT); Journal; Article; (JOURNAL ARTICLE); General Review; (REVIEW) written in French. PubMed ID 11250604 AN 2001184265 MEDLINE (Copyright (C) 2008 U.S. National Library of Medicine on SciFinder (R))

Abstract

Aromatase is an enzymatic complex responsible for the conversion of androgens into estrogens; these hormones are important in development, reproduction, but also in the growth of estrogen-dependent cancer. This enzyme is present in 60-70% of the breast cancer. The aromatase inhibitors are important drugs in the breast cancer treatment of postmenopausal women. In order to study their in vivo activity, animal models have been developed, e.g. rat with tumour induced by 7,12-dimethylbenz[a]anthracene, PMSG-primed immature rat or athymic nude mice with aromatase transfected MCF-7 xenograft. In this review, we were interested in preclinical results obtained with both classes: steroidal and nonsteroidal inhibitors. The former group, as substrate analogs formestane or exemestane, are irreversible, selective and long-lasting inhibitors of aromatase. The nonsteroidal molecules, such as letrozole or anastrozole, are reversible inhibitors with high affinity. Finally, knowledge of the enzyme active site, with molecular modeling and site-directed mutagenesis, could be useful to develop new inhibitor families, more specific and potent in vivo.