

**GENUS ANNONA : FITOKIMIA, AKTIFITAS ANTIOKSIDAN DAN
ANTIANKER**

TESIS

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PROGRAM STUDI MAGISTER KIMIA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS ANDALAS
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ABSTRAK

Genus *Annona* : Fitokimia, Aktifitas Antioksidan dan Antikanker

Oleh:

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*Pembimbing

Genus *Annona*, terdiri dari sekitar 119 spesies, telah diteliti secara terus menerus dan terbukti memiliki beragam aktivitas farmakologis seperti antikanker, antioksidan, antiinflamasi, antibakteri dan sebagainya. Tanaman *Annona* tersebut seperti *Annona cherimolia* Mill, *Annona reticulate*, *Annona squamosa*, *Annona muricata* L memiliki sifat antioksidan, antimikroba, antiinflamasi, antihelminik, antipiretik, antihiperglikemik, analgesik, penyembuhan luka, dan efek sitotoksik disebabkan oleh adanya senyawa-senyawa aktif seperti acetogenin, alkaloid dan terpenoid yang berperan sebagai pengobatan atau mencegah anti-kanker. Senyawa senyawa metabolit sekunder yang terkandung dalam genus *Annona* telah diteliti dapat menghambat atau mencegah pertumbuhan sel kanker. Senyawa metabolit sekunder yang memiliki aktifitas sel kanker kebanyakan terdapat dalam daun, biji dan buah tanaman *Annona*. Aktifitas antikanker atau antitumor senyawa bioaktif berhubungan dengan struktur senyawa tersebut. Jumlah gugus hidroksil yang banyak dan didukung dengan posisi hidroksil yang mengapit cincin γ -lactone serta susunan stereokimia cincin THF menentukan keefektifan aktifitas sitotoksik (susunan stereokimia cincin THF ACG, threo/trans/erythro lebih aktif dari threo/trans/ threo), adanya gugus hidroksil pada bagian ekeor rantai karbon ACG dan untuk alkaloid disebabkan adanya 1,2-metillenedioksi and Nitrogen termetilasi.

Kata Kunci : Genus *Annona*, Antioksidan, Antikanker, Hubungan Struktur-Aktif

ABSTRACT

Genus *Annona*: Phytochemicals, Antioxidant Activities, And Anticancer

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The genus *Annona*, consisting of about 119 species, has been researched continuously and has been shown to have various pharmacological activities such as anticancer, antioxidant, anti-inflammatory, antibacterial and so on. *Annona* plants such as *Annona cherimolia* Mill, *Annona reticulate*, *Annona squamosa*, *Annona muricata* L. have antioxidant, antimicrobial, anti-inflammatory, anthelmintic, antipyretic, antihyperglycemic, analgesic, wound healing, and cytotoxic effects caused by the presence of active compounds such as acetogenin, alkaloids and terpenoids that act as treatment or prevent anti-cancer. Secondary metabolite compounds contained in the *Annona* genus have been studied to inhibit or prevent the growth of cancer cells. Secondary metabolite compounds that have cancer cell activity are mostly found in the leaves, seeds and fruit of the *Annona* plant. Anticancer or antitumor activity of bioactive compounds is related to the structure of these compounds. The large number of hydroxyl groups and supported by the hydroxyl position flanking the -lactone ring and the stereochemical arrangement of the THF ring determines the effectiveness of cytotoxic activity (the stereochemical arrangement of the THF ACG ring, threo/trans/erythro is more active than threo/trans/threo), the presence of a hydroxyl group on the tail of the ACG carbon chain and for alkaloids due to the presence of 1,2-methylenedioxy and methylated Nitrogen..

Keywords: Genus *Annona*, Antioxidants, Anticancer, Active-Structure Relationships



