Bioorganic & Medicinal Chemistry 16 (2009) 1411–1421

Contents lists available at ScienceDirect

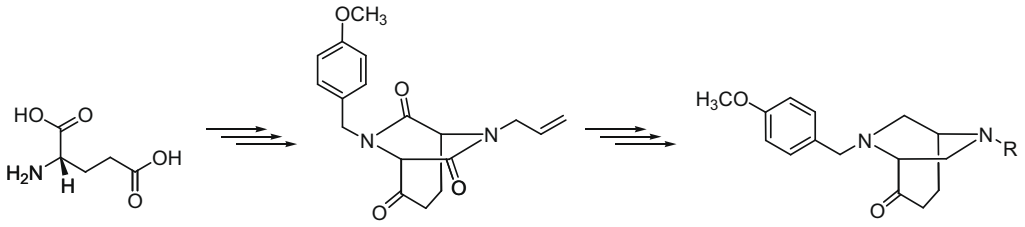
Bioorganic & Medicinal Chemistry

journal homepage: www.elsevier.com/locate/bmc

Bioorganic & Medicinal Chemistry Vol. 17, No. 4, 2009

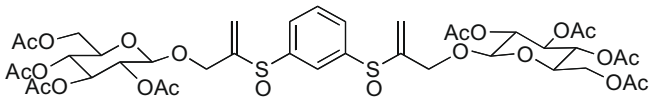
Contents

ARTICLES

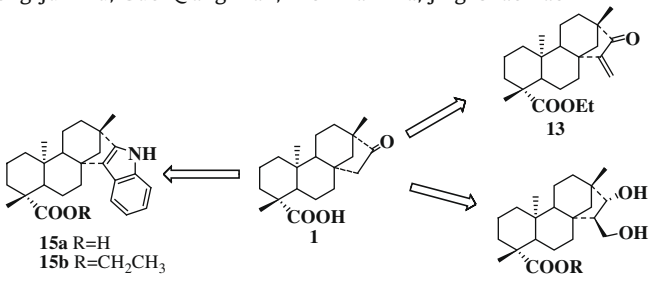


(S)-glutamate

R = dimethylallyl (**12**)
σ_1: K_i = 20 nM

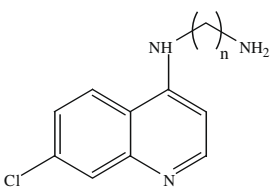


A series of thio-bis-β-D-glucopyranosides containing alkane or arene spacers of different length and flexibility have been synthesized. The relationship between their molecular structure and biological response has been investigated. Product shown above proved to be a good inductor of cell death by apoptosis.

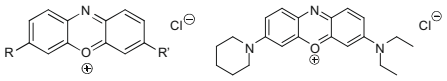


A novel series of isosteviol derivatives were designed and prepared. Within all compounds, **15b** (IC_{50} = 68.2 μM) showed the most potent inhibitory activities against α-glucosidase.

A series of 33 quinoline derivatives have been synthesized and evaluated for their in vitro antibacterial activity against *Mycobacterium tuberculosis* H_{37}Rv using the Alamar Blue susceptibility test and the activity expressed as the minimum inhibitory concentration (MIC) in μg/mL. Compounds **5e** and **5f** exhibited a significant activity at 6.25 and 3.12 μg/mL, respectively, when compared with first line drugs such as ethambutol and could be a good starting point to develop new lead compounds in the fight against multi-drug resistant tuberculosis.

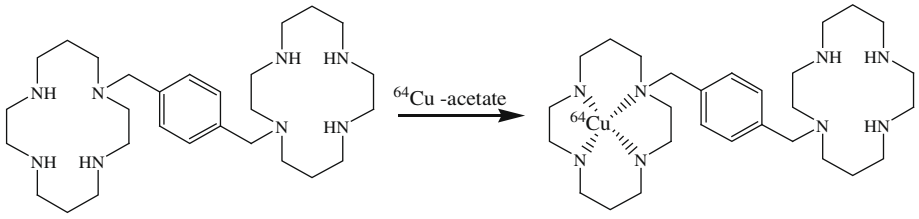


5e: n= 8
5f: n=10

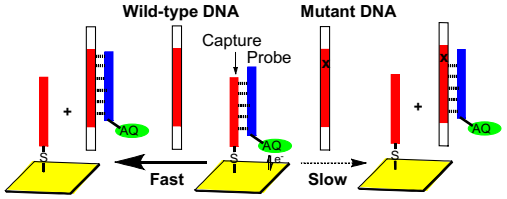


SSJ-206

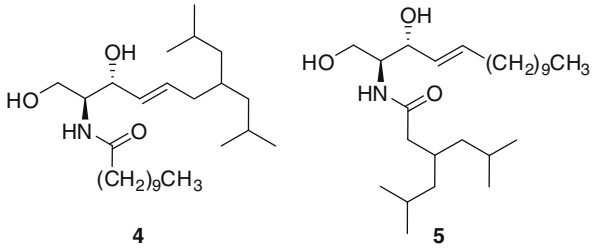
Pharmacodynamics and pharmacokinetics studies were carried out on a series of phenoxazinium derivatives as antimalarial agent.



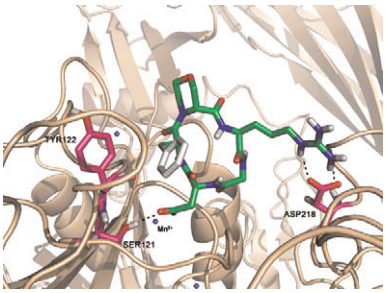
Incorporation of Cu-64 into AMD3100

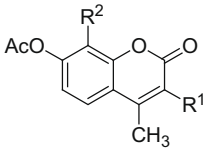


Electronic detection of DNA mutation based on DNA strand exchange reactions (SERs) is described.
The presence of a single base mismatch can be electrochemically determined from the slower SER rates compared with fully matched DNA.



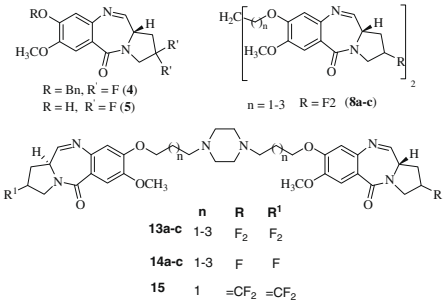
4 **5**

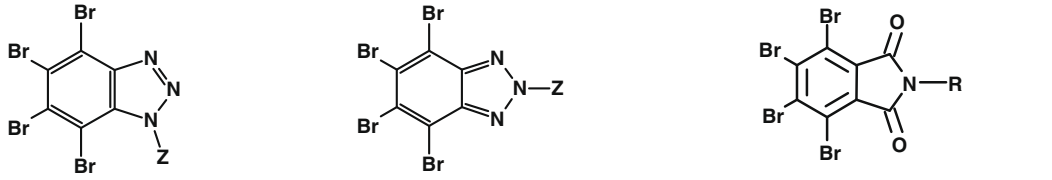




$R^1 = C_2H_5 / C_6H_{13} / C_{10}H_{21}$
$R^2 = H / OAc$

A series of 3-alkyl-4-methylcoumarins were synthesized. The effect of alkyl substitution at C-3 position of acetoxy coumarins were studied for antioxidant activities, that is, transacetylase and nitric oxide synthase.

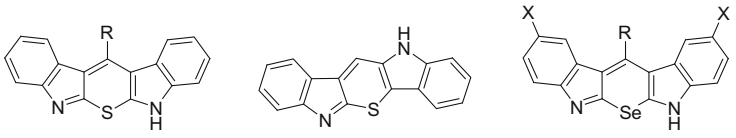




Z = C_2H_4OH; C_2H_4Br; C_3H_6OH; C_3H_6Cl; $C_3H_6NC_4H_8NCH_3$; C_4H_8OH

Z = C_2H_4OH; C_2H_4Br; $C_2H_4N(CH_3)_2$; C_3H_6OH; C_4H_8OH; C_3H_6Cl; $C_3H_6OPO(OH)_2$; $C_3H_6NC_4H_8NCH_3$

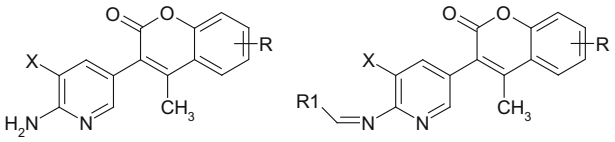
R = $C_2H_4N(CH_3)_2$; CH_2CN; CH_2CF_3



5 R = H
7 R = Me

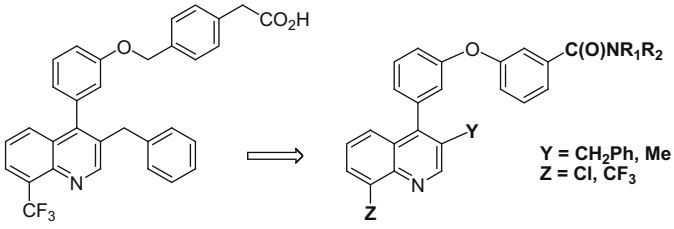
13

16 X = H, R = H
17 X = H, R = Me
18 X = OMe, R = H
19 X = OMe, R = Me



1-8

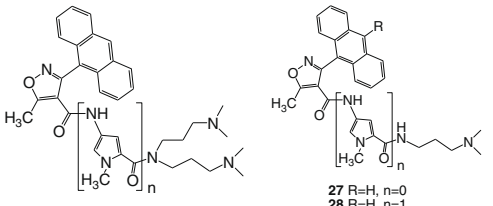
9-64



3 **4**

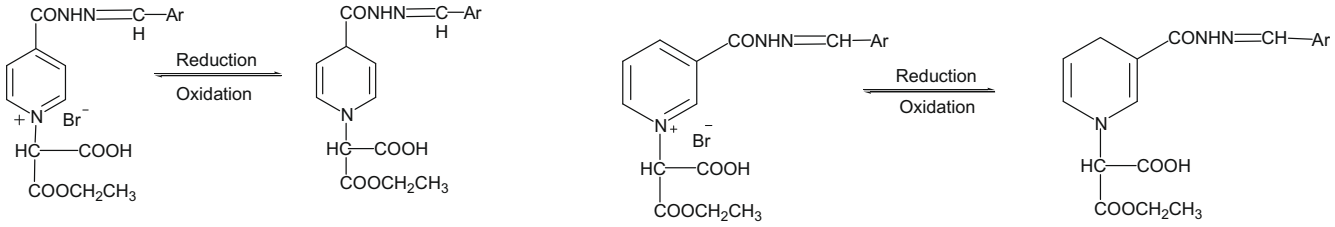
A series of biarylether amide quinolines (**4**) was prepared as LXR agonists.

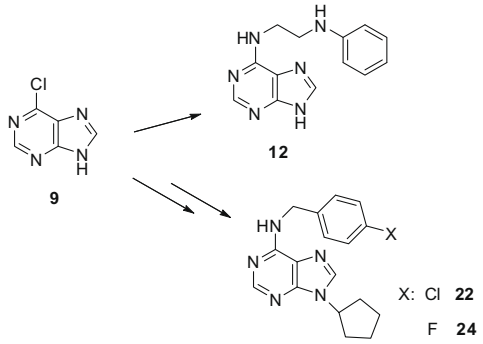
A lanthanide catalyzed modification of Weinreb's amidation was employed to prepare a series of sterically encumbered Aryl Isoxazolyl aMides (AIMs) (While not a strict acronym, the designation AIM is in honor of the memory of Professor Albert I. Meyers.), and the structure activity relationship for anticancer activity surveyed. The mean GI_{50} against the NCI60 cell line panel for the length of the oligopyrrole moiety (n = the number of pyrroles) was observed as $1 > 0 \gg 2 > 3$ for the bis-dimethylaminopropyl series **23–26**) and $1 > 2 \gg 0$ for the mono-dimethylaminopropyl series **(27–29)**; and for the anthracenyl C(10) position was Ph ≈ Cl ≫ H > Br (**28**, **30–32**). Based upon preliminary experiments, a structural argument is advanced suggesting that the preliminary experiments toward understanding the Mechanism of action are more consistent with G4 stabilization than B-DNA intercalation.

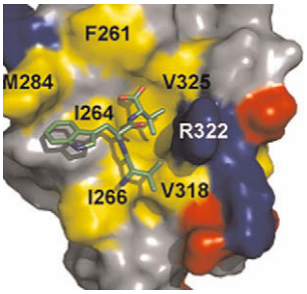


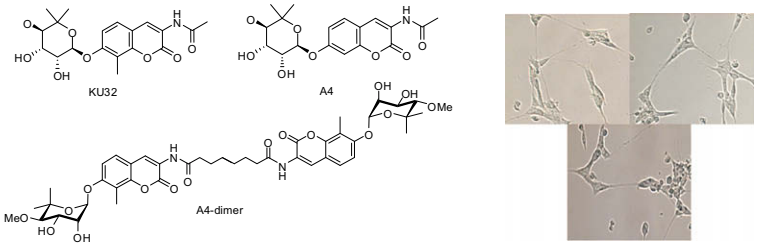
23 n=0
24 n=1
25 n=2
26 n=3

27 R=H, n=0
28 R=H, n=1
29 R=H, n=2
30 R=Cl, n=1
31 R=Br, n=1
32 R=Ph, n=1









A series of novobiocin analogues, including A4, A4-dimer and KU32 from our laboratory, along with several other previously identified Hsp90 natural product inhibitors, were evaluated their ability to protect neuronal cells against Aβ-induced toxicity utilizing an LDH activity assay developed for high-throughput screening.

*Corresponding author
ⓘ+ Supplementary data available via ScienceDirect

COVER

An insight into biologically relevant chemical space showing the scaffolds of potential natural-product based inhibitors orbiting their target, the protein structure of protein 11-beta steroid dehydrogenase (PDB code 1xu7). Graphic produced using Pymol (http://www.pymol.org). [M. A. Koch, A. Schuffenhauer, M. Scheck, S. Wetzel, M. Casaulta, A. Odermatt, P. Ertl, H. Waldmann, Charting biologically relevant chemical space: A structural classification of natural products (SCONP), *PNAS* **2005**, *102*, 17272–17277 and S. Wetzel, H. Waldmann, Cheminformatic analysis of natural products and their chemical space, *Chimia* **2007**, *61*(6), 355–360].

Indexed/Abstracted in: Beilstein, Biochemistry & Biophysics Citation Index, CANCERLIT, Chemical Abstracts, Chemistry Citation Index, Current Awareness in Biological Sciences/BIOBASE, Current Contents: Life Sciences, EMBASE/Excerpta Medica, MEDLINE, PASCAL, Research Alert, Science Citation Index, SciSearch, TOXFILE

ELSEVIER

ISSN 0968-0896