Bioorganic & Medicinal Chemistry 19 (2011) 6543–6555

Contents lists available at SciVerse ScienceDirect

Bioorganic & Medicinal Chemistry

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

Bioorganic & Medicinal Chemistry Volume 19, Issue 22, 2011

Symposium-in-Print

Current Perspectives in Marine Bioorganic Chemistry

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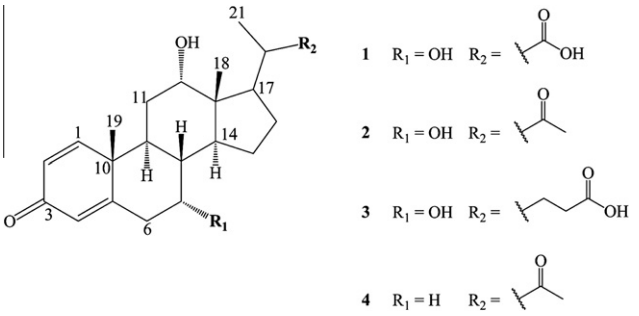
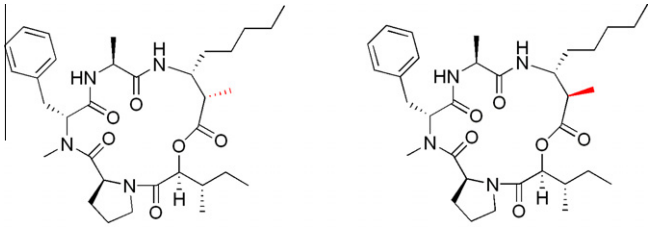
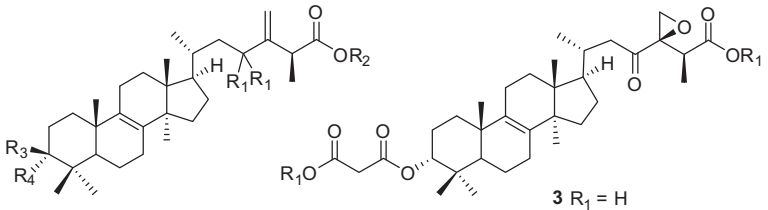


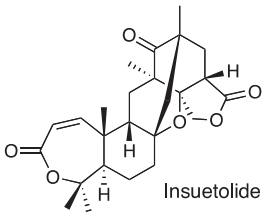


Porpoisamide A **Porpoisamide B**

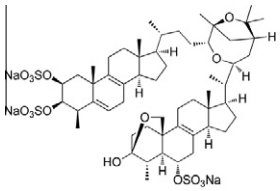
The porpoisamides are two unique cyclic depsipeptides that differ only in the epimeric nature of C-2 of the β-amino acid, 3-amino-2-methyloctanoic acid.



1 R_1 = O R_2 = H R_3 = H R_4 = OH
2 R_1 = H R_2 = H R_3 = R_4 = O
4 R_1 = O R_2 = H R_3 = H R_4 = $O_2CCH_2CO_2H$
6 R_1 = O R_2 = Me R_3 = H R_4 = $O_2CCH_2CO_2Me$



Insuetolide A (**1**)



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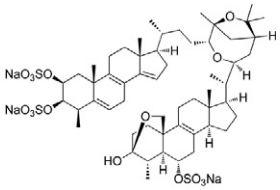

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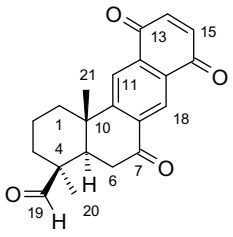

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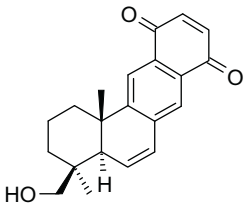

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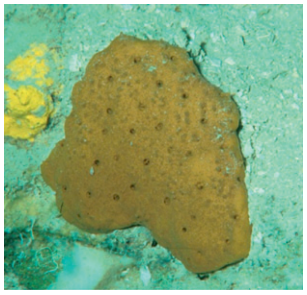

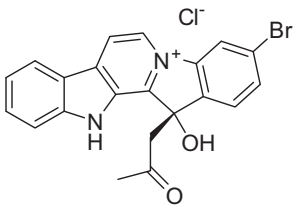

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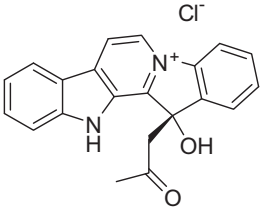

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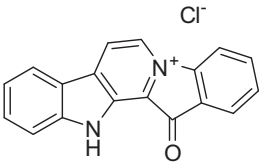

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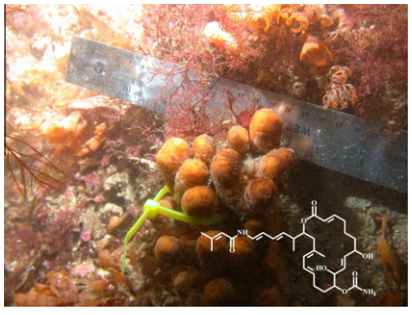

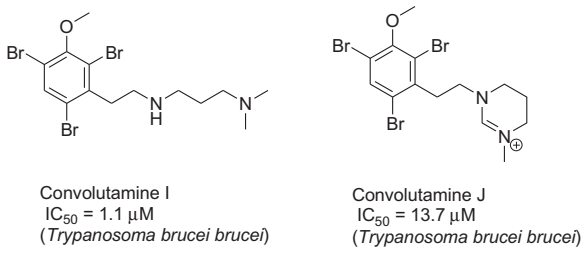

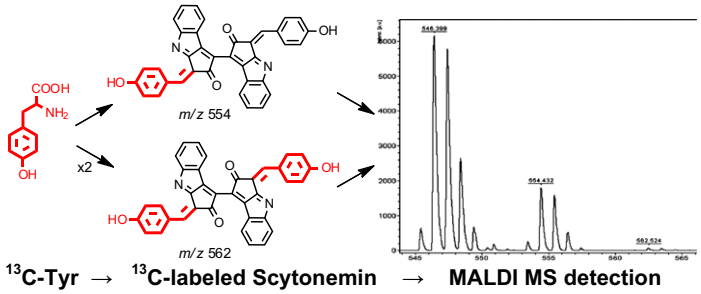

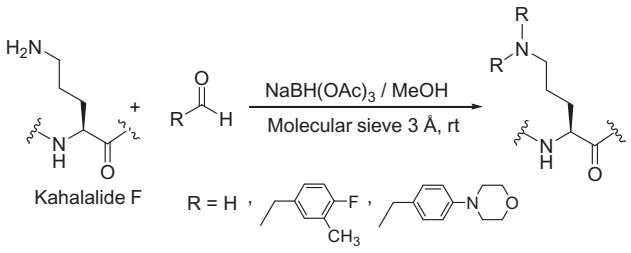

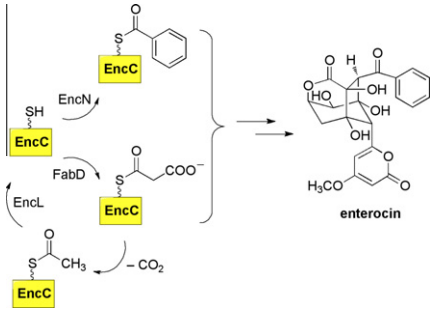

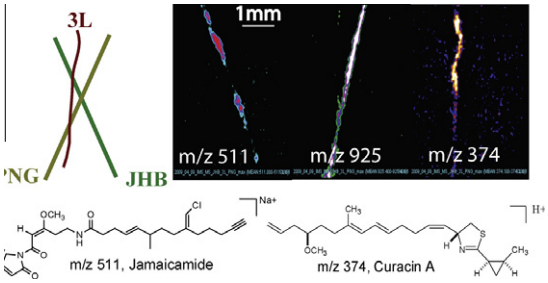

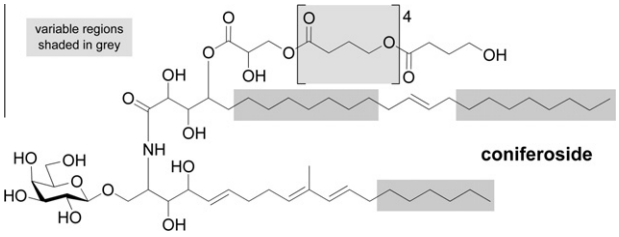

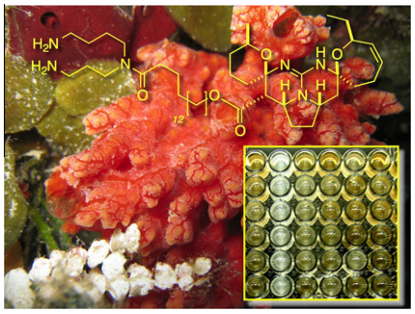

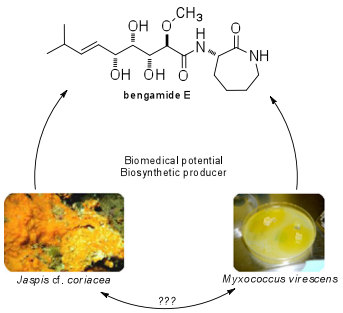

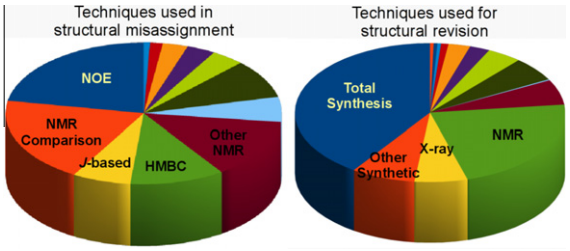

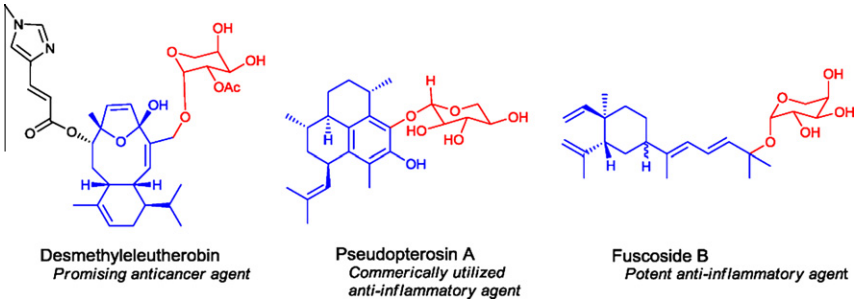

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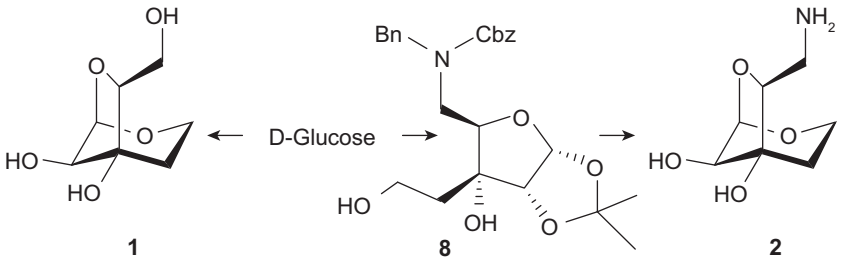
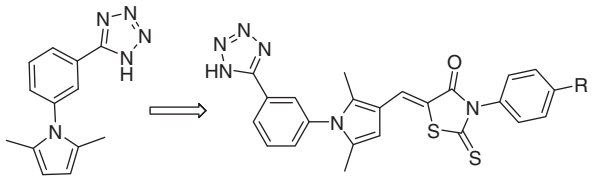
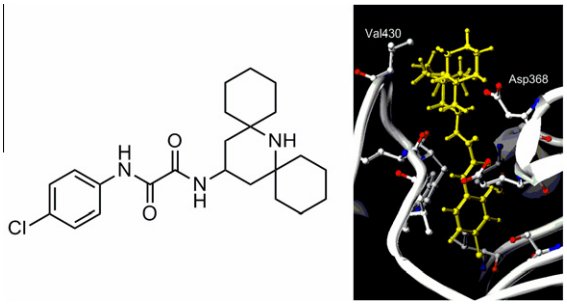
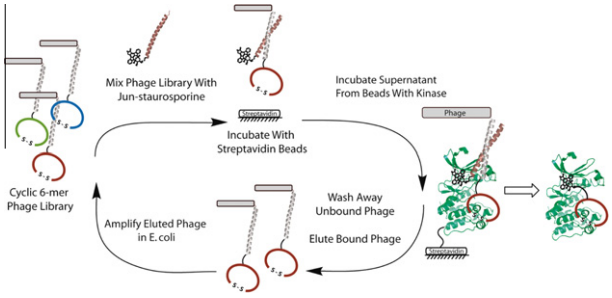
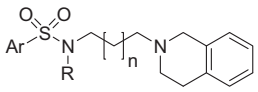




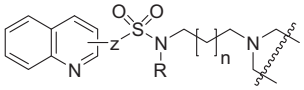






18 - 21

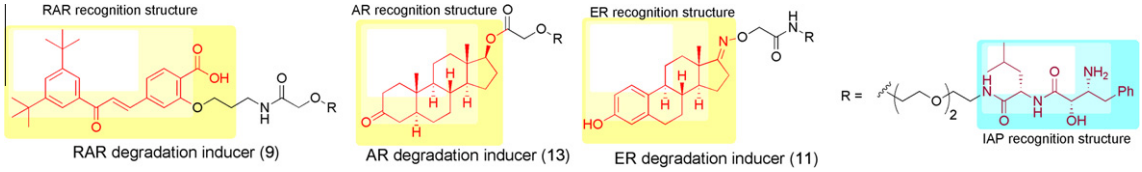
Ar = phenyl, 1-, 2-naphthyl
n = 0, 1, 2
R = $(CH_2)_2NH_2$, $(CH_2)_3NH_2$

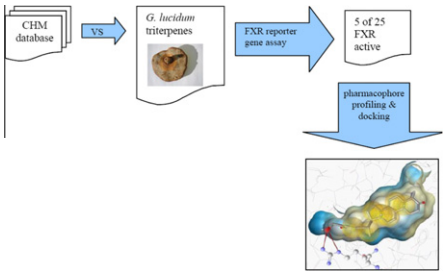


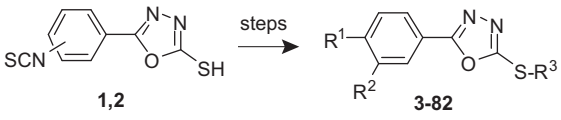
28 - 40, 49 - 55

Amine = 1,2,3,4-tetrahydroisoquinoline, perhydroisoquinoline, 4,5,6,7-tetrahydrothieno[*3,2-c*]pyridine, 2-methoxyphenylpiperazine
R = H, C_2H_5
z = 3, 6, 7, 8; n = 1, 2, 3

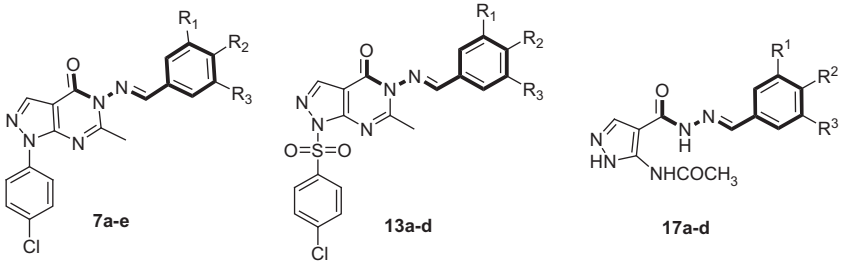
The synthesis of a novel series of phenylpyrazolodiazepin-7-one derivatives **7a**–**g**, **8a**–**o** and their antiproliferative activities against A375P melanoma cell line and U937 hematopoietic cell line were described.

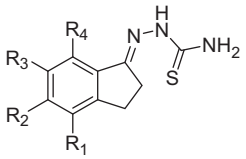






The present work reports the synthesis of novel pyrazolo[3,4-*d*]pyrimidines and related pyrazole hydrazones and the evaluation of their cytotoxic activity against human breast cancer cell MCF-7. In addition, the effect of selected compounds on the activities of free-radical-metabolizing enzymes as well as the levels of oxidative stress parameters in MCF-7 cells was estimated.





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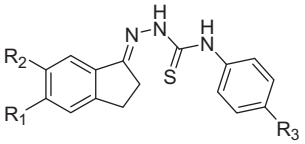
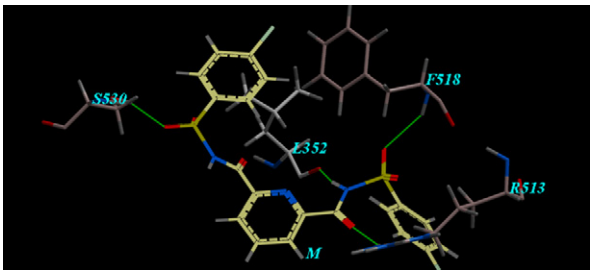
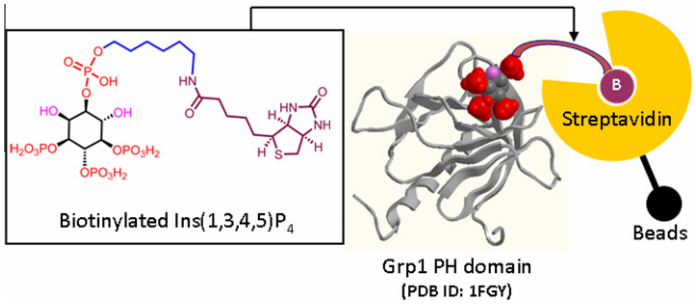


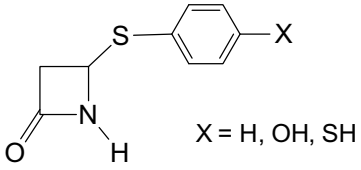
19-24

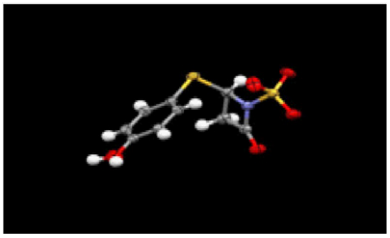
Total 24 thiosemicarbazones were synthesized and screened for in vitro tripanosomicidal activity against the epimastigote form of *Trypanosoma cruzi*. Most of the evaluated compounds displayed remarkable activity with excellent selectivity indexes. Two of these derivatives inhibited cruzipain at the dose assayed. The mode of action was explained using molecular docking studies.

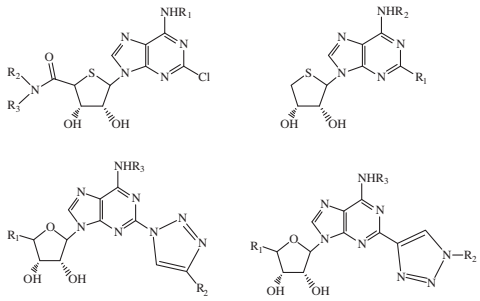




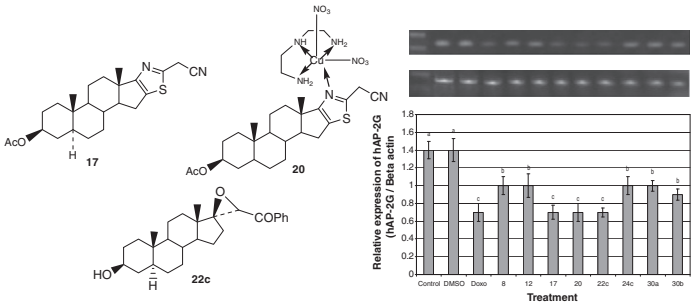
C4 Phenylthio-β-lactams active against *Moraxella catarrhalis* and *Mycobacterium tuberculosis.*



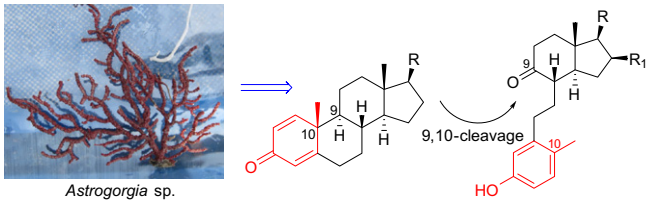


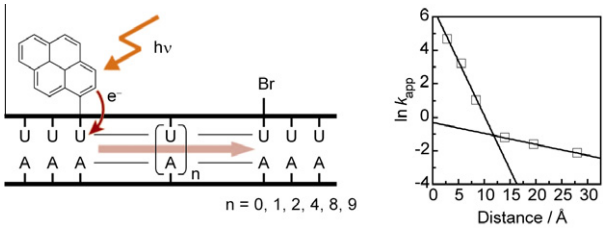


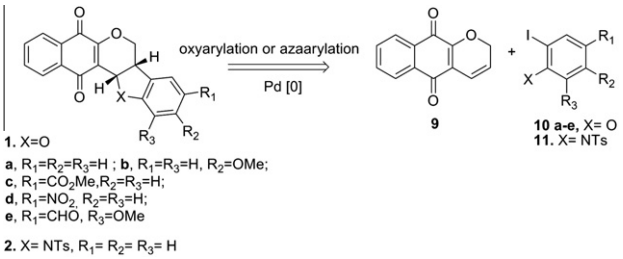
A QSAR method based on 3D-MoRSE descriptors provided a highly robust and predictive model for the binding affinity of a series of potent and selective antagonists of the human A_3 adenosine receptor.

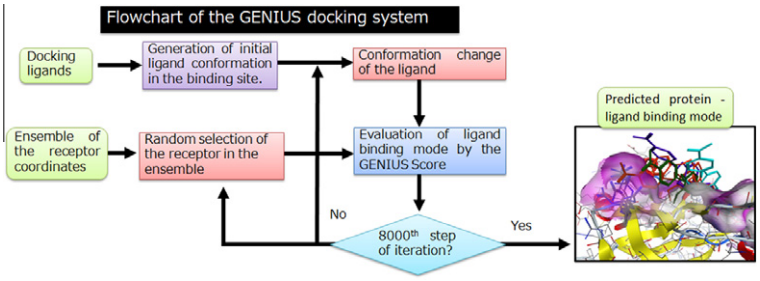


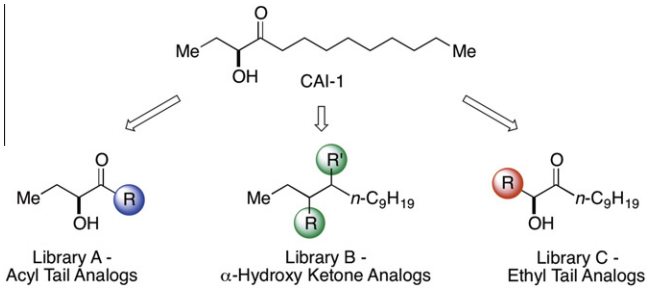
The present study aimed to synthesize and evaluate new potential chemotherapeutic anti-breast cancer agents. Thiazolo-androstane **17** (IC_{50} = 2.5 μM) exhibited more inhibitory influence on MCF-7 growth than doxorubicin (IC_{50} = 4.5 μM) after 48 h incubation. All the tested steroid derivatives exhibited significant depletion in gene expression of breast cancer related genes. Noteworthy, compounds **17**, **20** and **22c** showed the most pronounced effect in this respect.

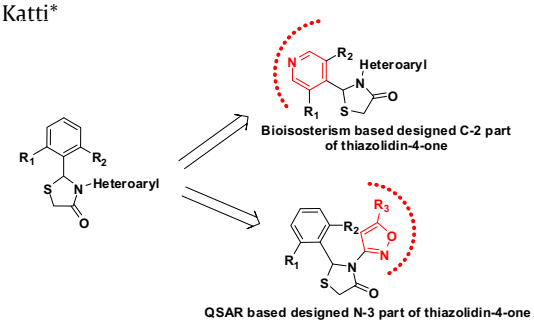












On the basis of QSAR-based drug design strategy and bioisosteric principle, a series of novel thiazolidin-4-ones bearing different aryl/heteroaryl moieties at position C-2 and N-3 of thiazolidin-4-one were synthesized and evaluated as potent inhibitors of human immunodeficiency virus type-1 (HIV-1).

OTHER CONTENTS

*Corresponding author
Supplementary data available via SciVerse ScienceDirect

COVER

The molecular structures and information flow depicted on the cover illustrates how current research is "Harnessing the Biosynthetic Capacity of Marine-Derived Organisms." [Carter, G.T.; Crews, P. *Bioorg. Med. Chem.* **2011,** *19,* 9599.]

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