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Bioorganic & Medicinal Chemistry Letters

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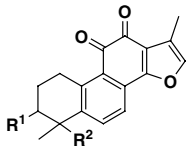
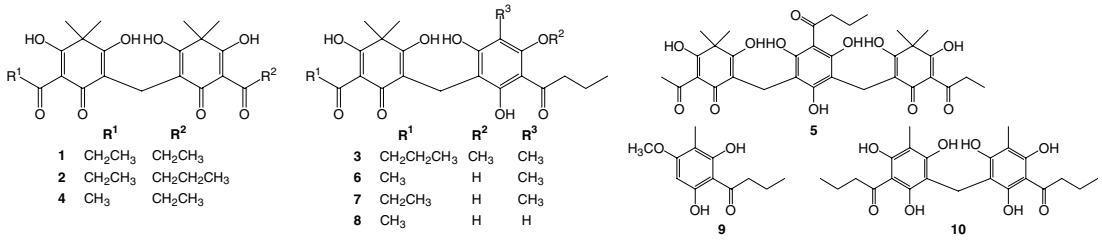
Contents

ARTICLES



3-Hydroxytanshinone (R^1=OH, R^2=CH_3)
Tanshinone IIB (R^1=H, R^2=CH_2OH)

Novel diazirine or biotin-labeled tanshinone probes were synthesized and evaluated for TRAP inhibitory activity against RANKL-induced osteoclastogenesis in RAW264.7 cells.

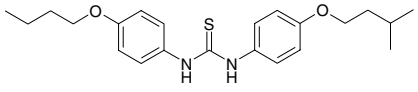


	R^1	R^2
1	CH_2CH_3	CH_2CH_3
2	CH_2CH_3	$CH_2CH_2CH_3$
4	CH_3	CH_2CH_3

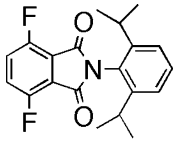
	R^1	R^2	R^3
3	$CH_2CH_2CH_3$	CH_3	CH_3
6	CH_3	H	CH_3
7	CH_2CH_3	H	CH_3
8	CH_3	H	H

5 9 10

Bioassay-guided fractionation of a MeOH extract of the rhizomes of *Dryopteris crassirhizoma* led to the isolation of a series of acylphloroglucinols, as the active principles.

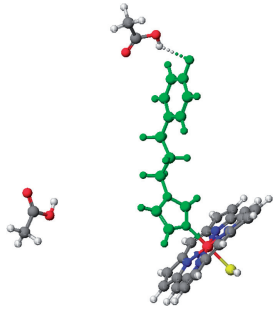


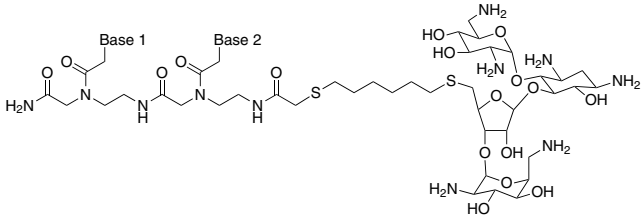
Analogues of isoxyl with symmetrical and unsymmetrical modifications have significantly enhanced activity against both *Mycobacterium tuberculosis* and *Mycobacterium bovis* BCG.



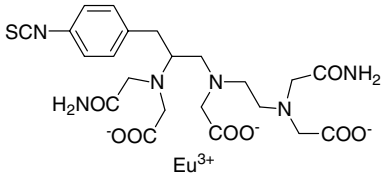
4, 7FPP-33

4,7FPP-33 has been shown to possess potent tubulin polymerization inhibiting activity.

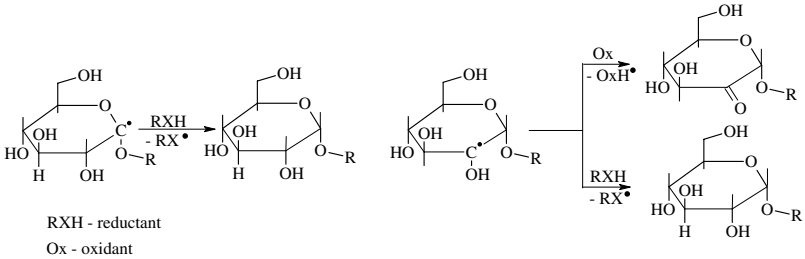




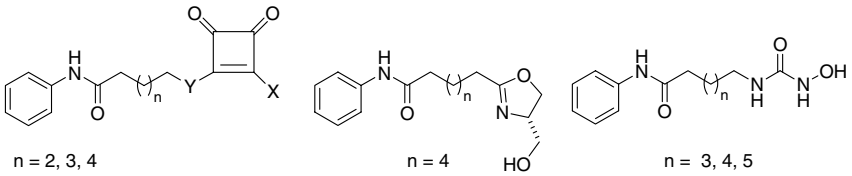
The screening of neomycin-peptide nucleic acid heteroconjugates against RRE RNA is reported. Selected compounds showed low nanomolar affinity (**4-AA**, K_d = 58 nM; **4-GG**, K_d = 30 nM) and specificity against the target.

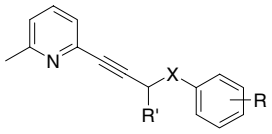


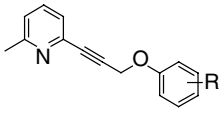
A neutral bifunctional derivative of DTPA europium(III) was synthesized and its suitability to dissociation-enhanced lanthanide fluorescence immunoassay was investigated.

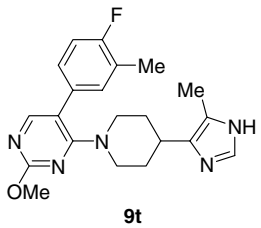


RXH - reductant
Ox - oxidant

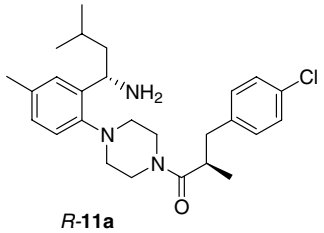




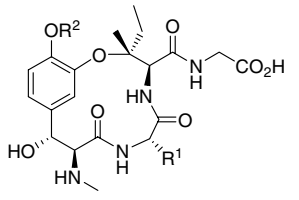




9t

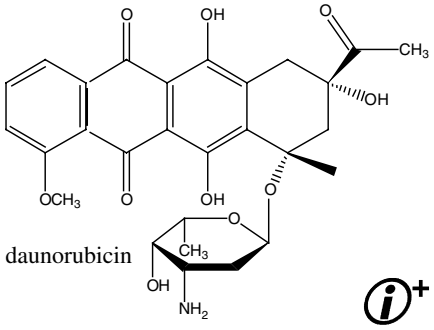


R-**11a**

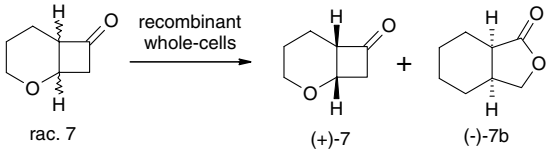


R^1	R^2
Pr^i	H
Pr^i	Me
Me	H
Bu^i	H

Ustiloxins

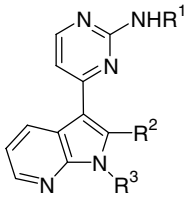


daunorubicin

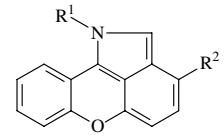


rac. 7 (+)-7 (-)-7b

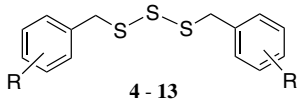
In contrast to previously reported Baeyer–Villiger monooxygenases, kinetic resolution processes of fused cyclobutanones are performed by engineered *Escherichia coli* expressing an enzyme from *Mycobacterium tuberculosis*.



A novel series of 2-amino-4-(7-azaindol-3-yl)pyrimidines was discovered as cyclin dependent kinase 1 (CDK1) inhibitors. The core structure was synthesized via Pd(II) catalyzed coupling reaction. A number of analogues showed good potency for CDK1 and exhibited cellular antiproliferation activity. The structure–activity relationship is described.



R^1= CH_3CH_2, $RRNCH_2CH_2$
R^2= NO_2, $RRNCH_2CH_2NH$
NRR= $N(CH_3)_2$, $N(CH_2CH_3)_2$, $N(CH_2)_4$



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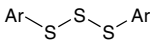
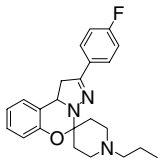


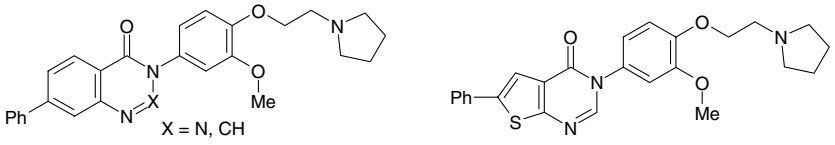
14 - 20

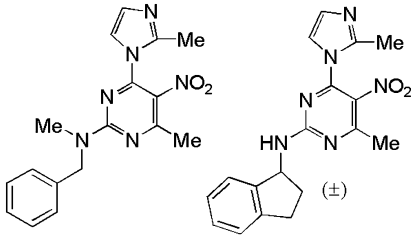
New bis-aromatic and heterocyclic trisulfide derivatives **5**, **7**–**10** were synthesized by optimizing lead dibenzyl trisulfide natural product (**4**) to evaluate their anti-tumor activities. Five compounds **5**–**7**, **9**, and **10** exhibited potent anti-tumor activities against eight different tumor cell lines with low cytotoxicity against HepG2. Initial SAR was discussed, and MOA of these anti-microtubule agents was suggested based on cell kinetic response patterns observed on RT-CES system.



45
IC_{50} = 1.8 nM

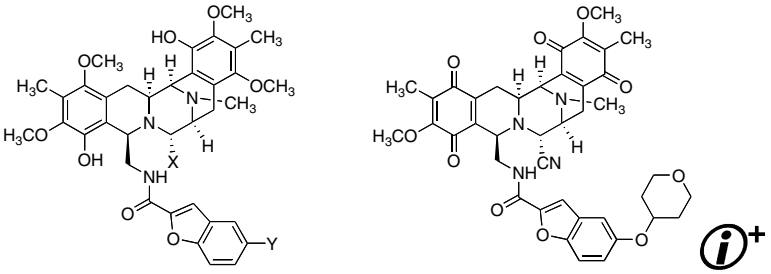
The synthesis of the compound **45** (IC_{50} = 1.8 nM) and its analogs is reported.



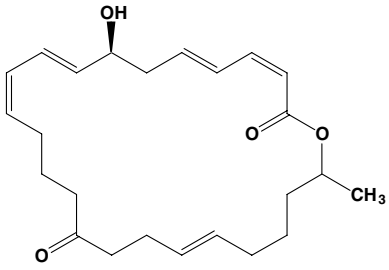


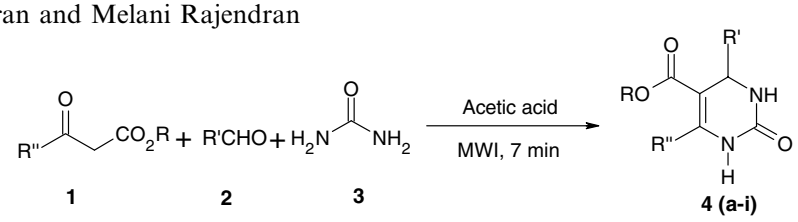
We have identified a new series of non-nucleoside inhibitors that are more potent than ganciclovir and cidofovir with a similar toxicity profile. SAR studies suggest that these inhibitors are specific for hCMV primase.

Novel analogs of (−)-saframycin A are described. Analogs are shown to be potent inhibitors of the in vitro growth of several tumor cells and active antitumor agents in a solid tumor model (HCT-116).

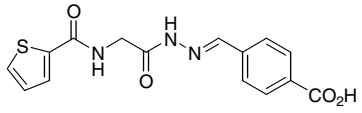


A new 24-membered ring lactone, macrolactin N, was isolated from a culture broth of *Bacillus subtilis* and its structure was established by various spectral analysis. Macrolactin N inhibited *Staphylococcus aureus* peptide deformylase with an IC_{50} value of 7.5 μM.

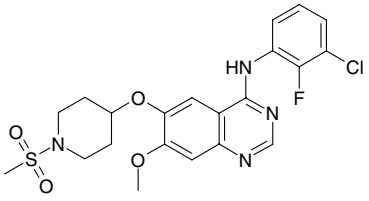




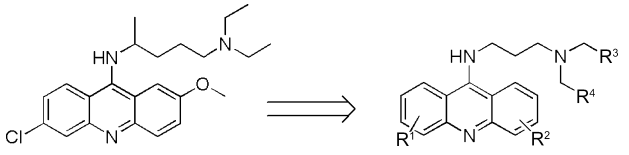
A series of 4-(substituted)-3,4-dihydropyrimidinone derivatives have been synthesized and evaluated for cardiovascular effects at different dose levels. The interaction with β-blocker and calcium channel blocker was also investigated. Entry **4d** emerged as the most interesting compound in this series.

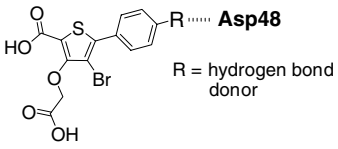


Virtual screening of a chemical database of 508,143 commercially available chemicals was performed to search for new methionyl-tRNA synthetase (MetRS) inhibitors.



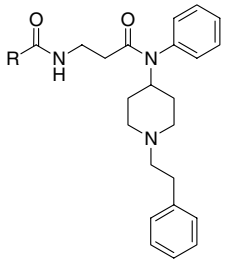
20: EGFR IC_{50} = 2 nM
KB Cell IC_{50} = 7 nM



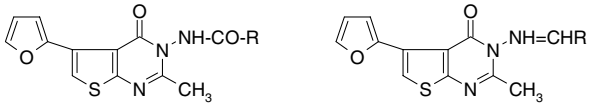


A series of monocyclic thiophenes was designed and synthesized as PTP1B inhibitors. Guided by X-ray co-crystal structural information and computational modeling, rational design led to key interactions with Asp48 and improved inhibitory potency against PTP1B.

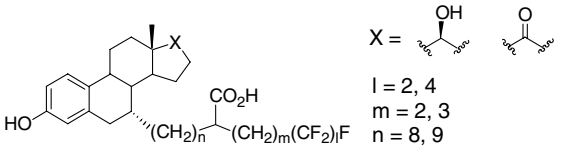
The synthesis and results of binding affinity and in vitro bioassays of novel fentanyl analogues are reported.



R: CH_3, C_2H_5, CF_3, C_2H_5NH, CH_3CO-Phe, Tyr-*D*-Ala-Gly-Phe



Correlation of antibacterial activity of some *N*-[5-(2-furanyl)-2-methyl-4-oxo-4*H*-thieno[2,3-*d*]pyrimidin-3-yl]-carboxamide and 3-substituted-5-(2-furanyl)-2-methyl-3*H*-thieno[2,3-*d*]pyrimidin-4-ones with topological indices using Hansch analysis indicated the importance of topological parameter $^3\chi$ in contribution to antibacterial activity.



Steroid derivatives bearing the carboxy moiety in the long side chain at the 7-α position exhibited remarkable antiestrogen activities when administered orally.

OTHER CONTENTS

*Corresponding author
ⓘ+ Supplementary data available via ScienceDirect

COVER

View of the crystal structure of the DB819-d(CGCGAATTCGCG)$_2$ complex, looking down the minor groove of the DNA (see Campbell, N.H.; Evans, D.A.; Lee, M.P.H.; Parkinson, G.N.; Neidle, S. *Bioorg. Med. Chem. Lett.* **2006**, *16*, 15). The DB819 molecule is shown in space-filling mode. Visualisation produced with the VMD program. [Humphrey, W.; Dalke, A.; Schulten, K. *J. Mol. Graphics* **1996**, *14*, 33.]

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