Bioorganic & Medicinal Chemistry 20 (2012) 6895–6903

Contents lists available at SciVerse ScienceDirect

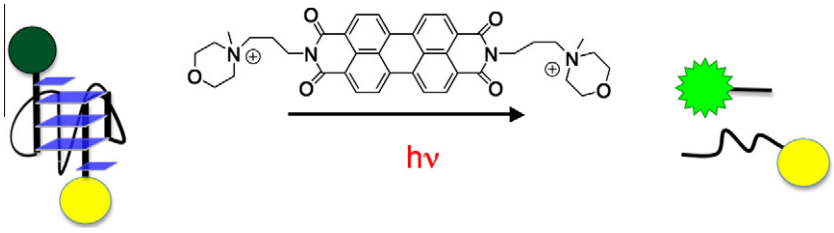
Bioorganic & Medicinal Chemistry

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

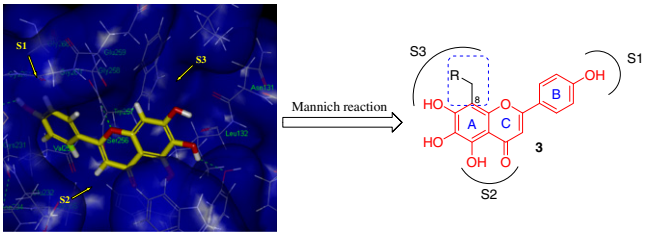
Bioorganic & Medicinal Chemistry Volume 20, Issue 24, 2012

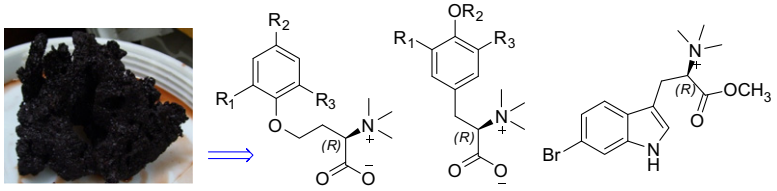
Contents

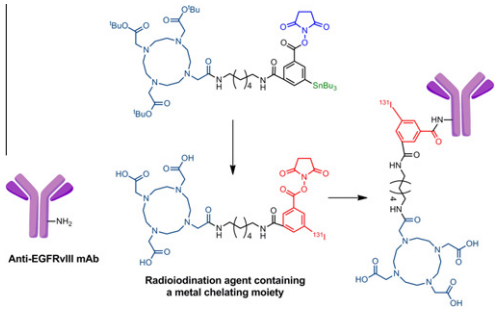
ARTICLES

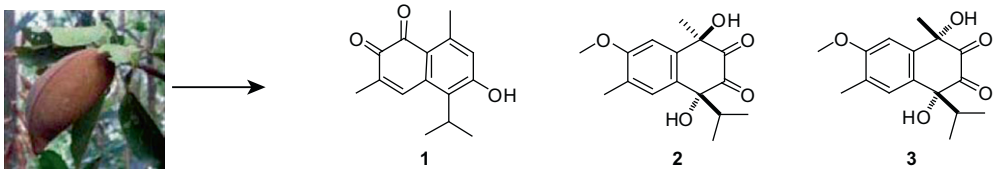


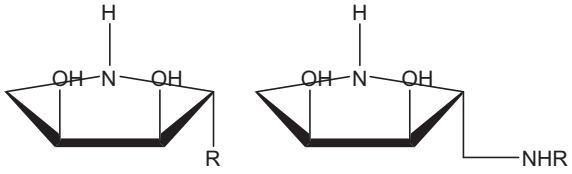
Two series of 8-aminomethylated derivatives were prepared by Mannich reaction of scutellarein (**2**) with appropriate aliphatic amines, alicyclic amines and formaldehyde. All the compounds were tested for their thrombin inhibition activity through the analyzation of prothrombin time (PT), activated partial thromboplastin time (APTT), thrombin time (TT) and fibrinogen (FIB). The antioxidant activities of these target products were assessed by 1,1-diphenyl-2-picrylhydrazyl radical 2,2-diphenyl-1-(2,4,6-trinitrophenyl) hydrazyl (DPPH) assay using 3-(4,5)-dimethylthiahiazo (-z-y1)-3,5-diphenytetrazoliumromide (MTT) assay method and the solubility were assessed by ultraviolet (UV). The results showed that morpholinyl aminomethylene substituent derivative (**3d**) demonstrated stronger anticoagulant activity, better water solubility and good antioxidant activity compared with scutellarein (**2**), which warrants further development as a agent for ischemic cerebrovascular disease treatment.



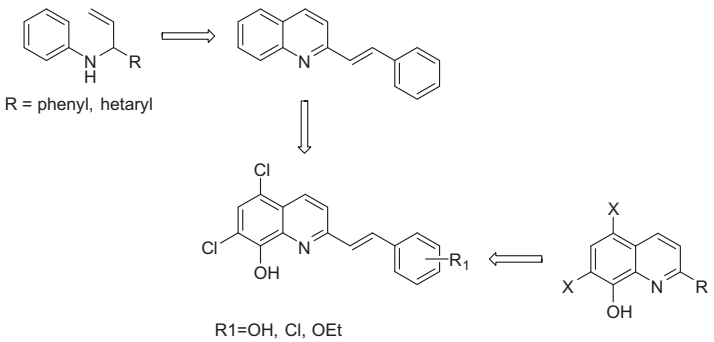


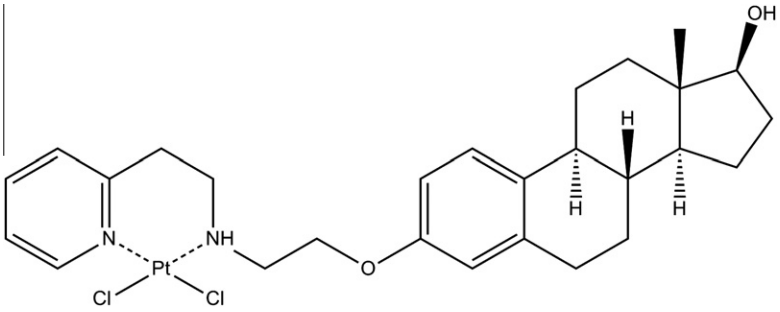


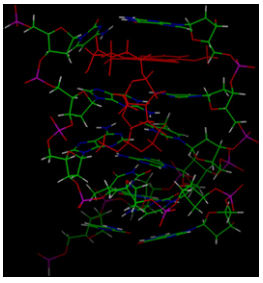


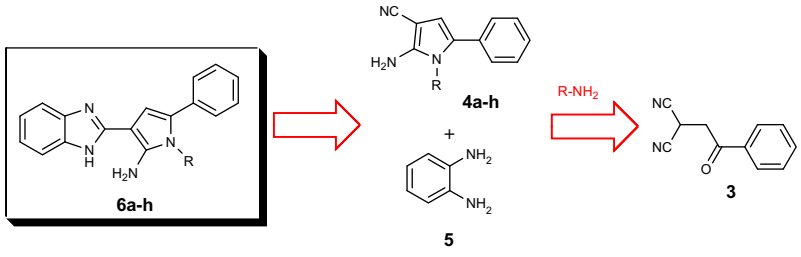


Virtual screening, QSAR and pharmacophore analysis of two set of compounds bearing the (2*R*, 3*R*, 4*S*)-2-aminomethylpyrrolidine 3,4-diol and the functionalized pyrrolidine derivatives with α-mannosidase inhibitory activity revealed that the bond flexibility along with number of aromatic groups are important for the hydrophobic π–π stacking interactions.

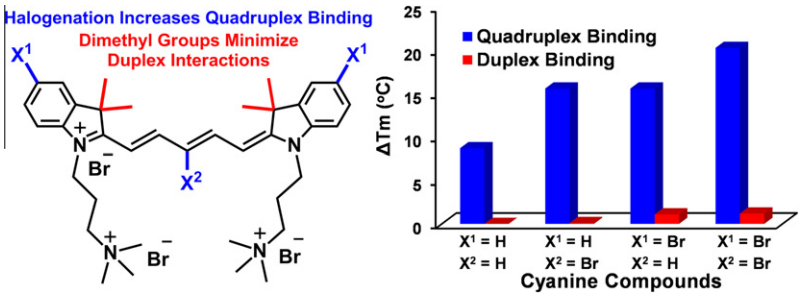


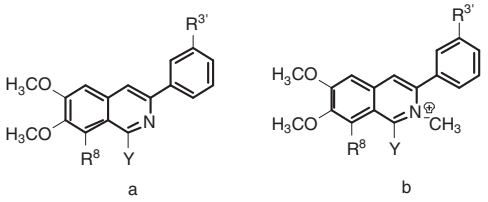




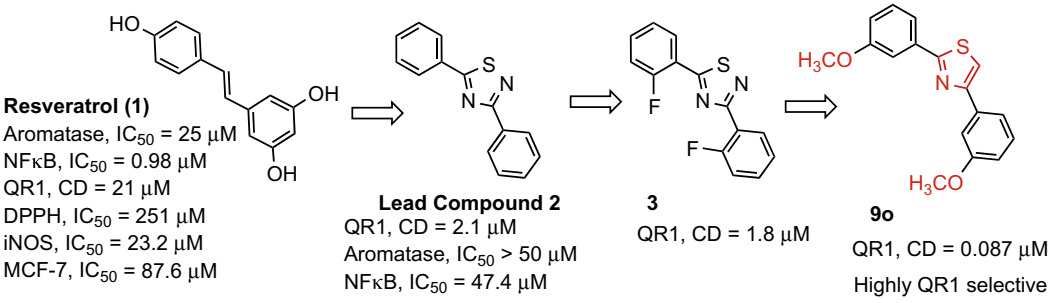


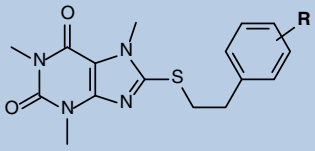
Novel benzimidazole-pyrrole conjugates





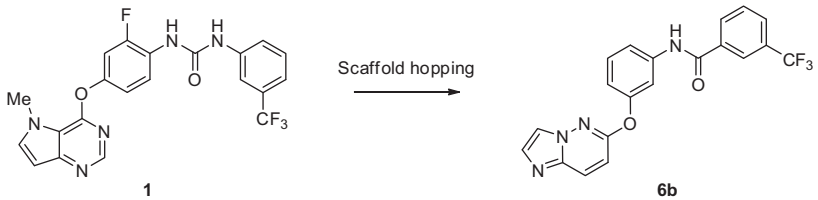
$R_{3'}$ = phenyl, 4-biphenyl, *t*-butyl, 4-*t*-butylphenyl; R_8 = H or OCH_3; Y = H, CH_3, $NHCH_3$, $N(CH_3)_2$, $NC(NH_2)_2$, CN, CH_2NH_2, $CH_2CH_2NH_2$, $CH_2NC(CH_3)NH_2$, $CH_2NC(NH_2)_2$, $CH_2CH_2NC(NH_2)_2$.

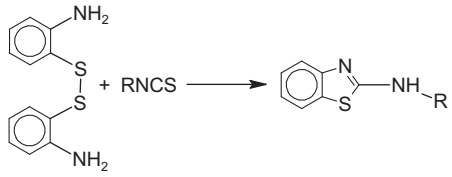




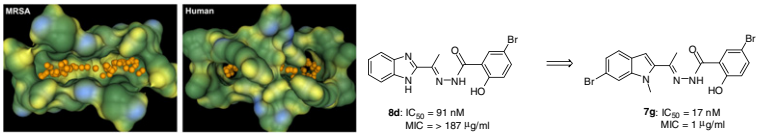
	R	IC_{50} MAO-A (μM)	IC_{50} MAO-B (μM)
1a	H	18.7	0.271
1b	4-Cl	8.46	0.020
1c	4-Br	108	0.019
1e	4-CF_3	No inhibition	0.019
1j	3-CF_3	141	0.017

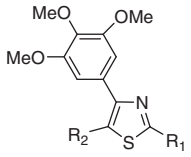
The human MAO inhibition potencies of a series of sulfanylcaffeine derivatives are reported.



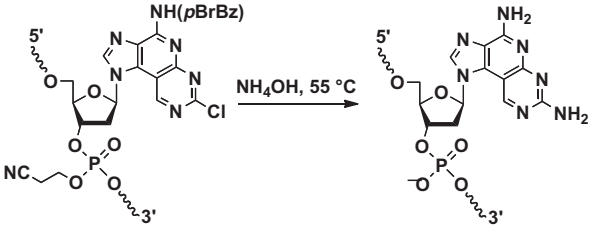


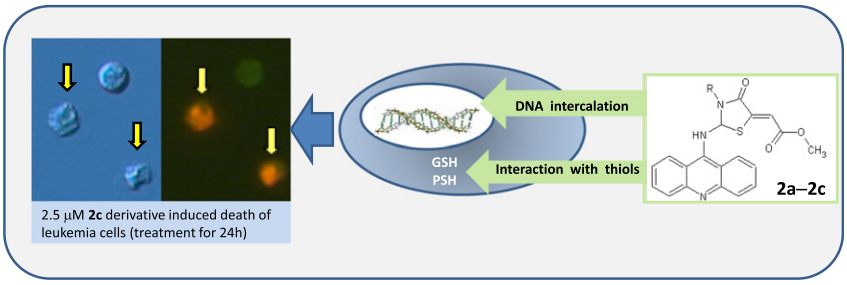
In silico and in vitro enzyme screening identified a benzimidazole hydrazone (**8d**) as a lead inhibitor of methicillin-resistant *Staphylococcus aureus* (MRSA) pyruvate kinase (PK) but without significant antibacterial activity. Structural and structure–activity studies have shown that this series binds in a novel allosteric binding site unique to bacterial PK. The original series was optimized for enzyme inhibition activity to identify indole analogs, such as **7g**, with nanomolar potency as inhibitors of MRSA PK, with high selectivity over human PK isoforms and which exhibit minimum inhibitory concentrations (MIC) for MRSA as potent as 1 μg/ml.

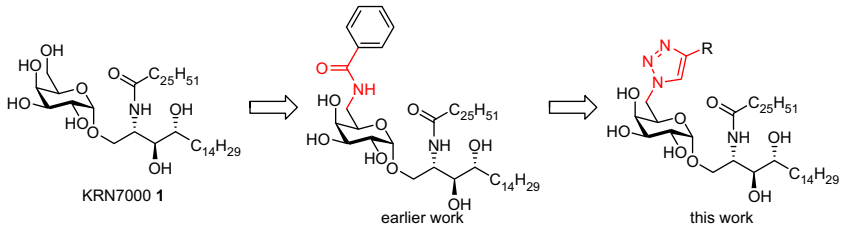


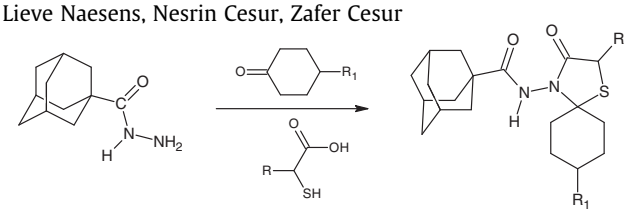


R_1=$NHCH_3$, $N(CH_3)_2$, Me
R_2=naphth-2-yl or substituted phenyl



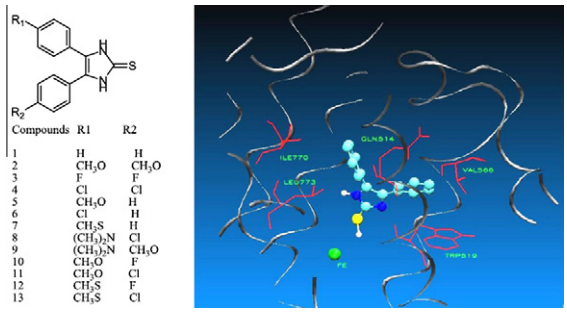


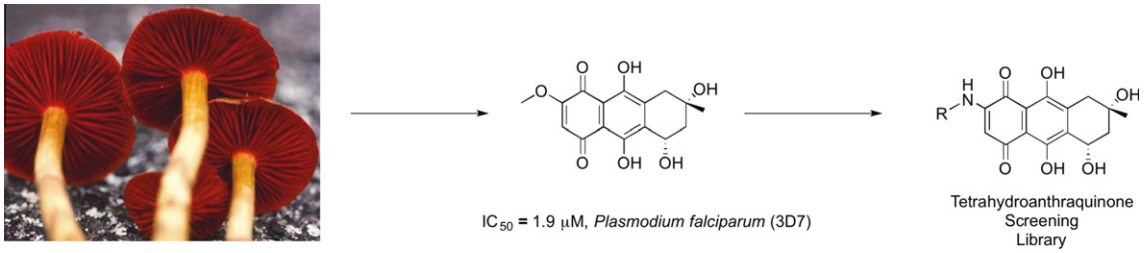


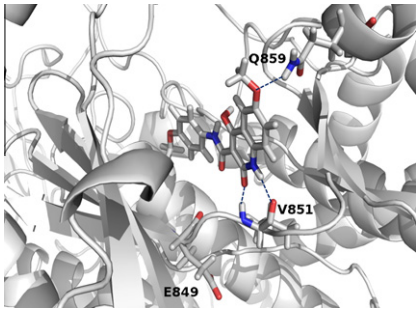


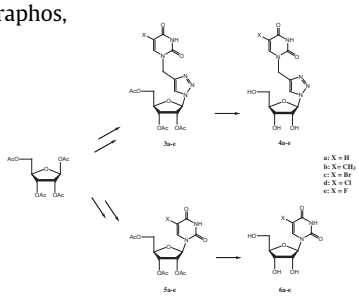
R= H, CH_3; R_1= H, CH_3, C_2H_5, C_3H_7, $C(CH_3)_3$, C_6H_5

The novel 1-adamantyl substituted *N*-(1-thia-4-azaspiro[4.5]decan-4-yl)carboxamides derived from adamantane-1-carbohydrazide were synthesized and tested for the antiinfluenza activity.

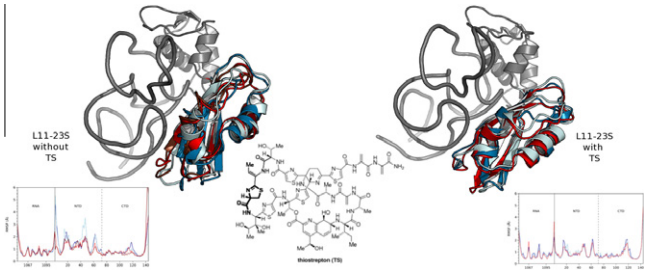


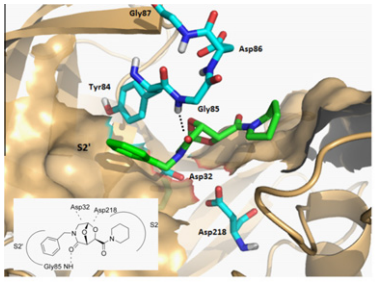




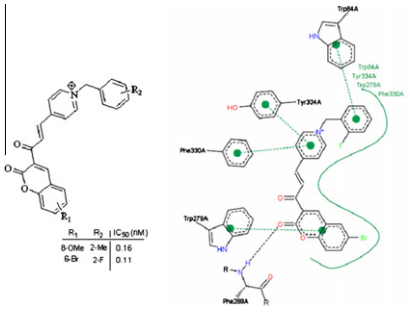


The synthesis of 1,2,3-triazole 5-substituted uracil furanonucleosides **4a**–**e** and 5-substituted uridines **6a**–**e**, is reported. The presence of the triazole group between the sugar and the base of the inhibitor is of primary importance for efficient inhibition, while the insertion of a substituent at the 5-pyrimidine position results to a less potent inhibitor of Ribonuclease A.





The binding mode of a panel of bicyclic aspartic protease inhibitors towards SAP2 of *Candida albicans* was assessed through enzyme inhibition assays and molecular modeling studies on a panel of stereoisomeric compounds.



A novel series of coumarin derivatives linked to benzyl pyridinium group were achieved as potent and dual binding site acetylcholinesterase inhibitors.

*Corresponding author
Supplementary data available via SciVerse ScienceDirect

COVER

Dipyrone (metamizol) is a common antipyretic drug and the most popular non-opioid analgesic in many countries. In spite of its long and widespread use, molecular details of its fate in the body are not fully known. Two unknown metabolites were now found, viz. arachidonoyl amides, and positively tested for cannabis receptor binding (CB1 and CB2) and cyclooxygenase inhibition. Two more puzzle pieces of the dipyrone story found! (Rogosch, T.; Sinning, C.; Podlewski, A.; Watzer, B.; Schlosburg, J.; Lichtman, A.H.; Cascio, M.G.; Bisogno, T.; Di Marzo, V.; Nüsing, R.; Imming, P. *Bioorg. Med. Chem.* **2012,** *20,* 103–109.]

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ISSN 0968-0896