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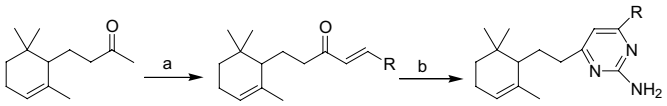
Bioorganic &
Medicinal
Chemistry

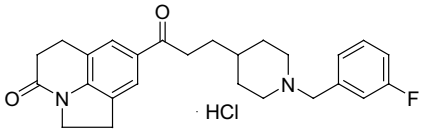
Bioorganic & Medicinal Chemistry Vol. 13, No. 6, 2005

Contents

ARTICLES



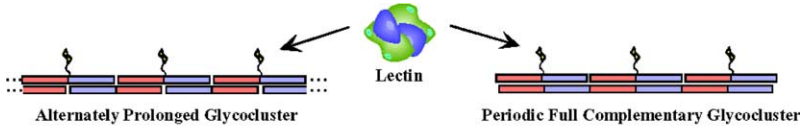
A series of 2,4,6-trisubstituted-pyrimidine derivatives were synthesized and evaluated for their in vivo pregnancy interceptive activity.



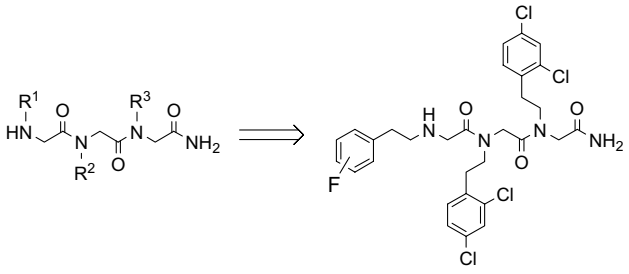
9c

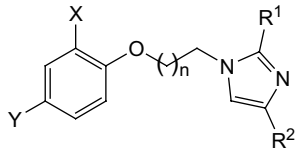
*h*AChE inhibition IC_{50} = 1.3 nM

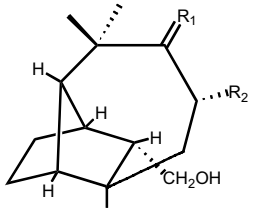
The syntheses and structure–activity relationships of TAK-802 and related compounds are described.



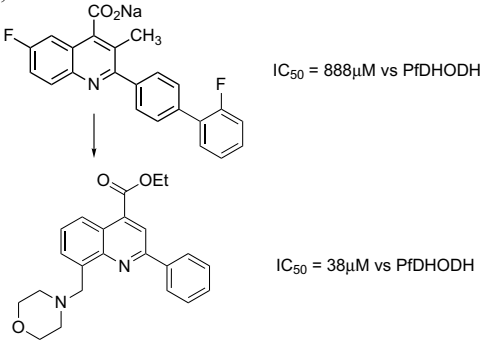
Which glycocluster is preferred by the lectin?





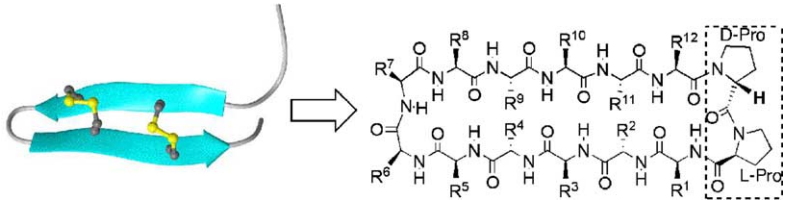


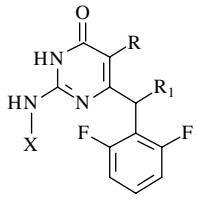
1- $R^1 = H_2$, $R^2 = H$
2- $R^1 = O$, $R^2 = H$
3- $R^1 = \beta H, \alpha OH$, $R^2 = H$
4- $R^1 = H_2$, $R^2 = OH$



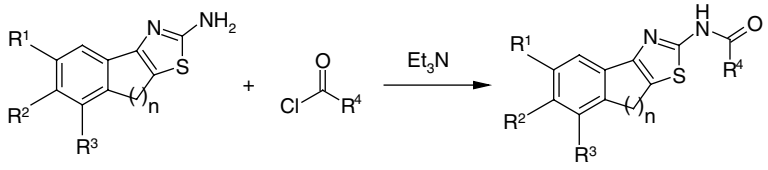
IC_{50} = 888μM vs PfDHODH

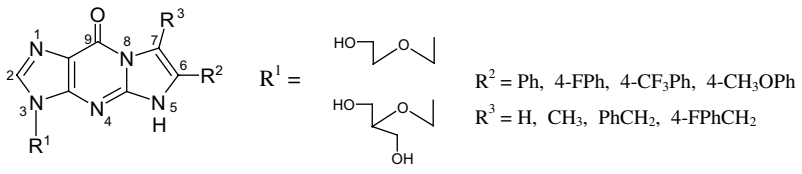
IC_{50} = 38μM vs PfDHODH



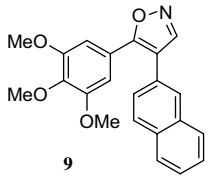


$R = R_1 = H$, Me; X = alkyl, aryl, arylalkyl





R^2 = Ph, 4-FPh, 4-CF_3Ph, 4-CH_3OPh
R^3 = H, CH_3, $PhCH_2$, 4-$FPhCH_2$

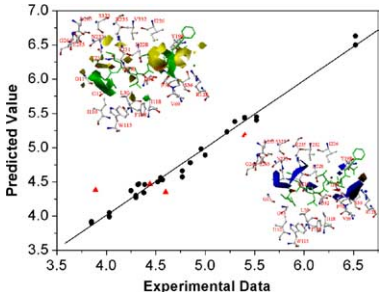


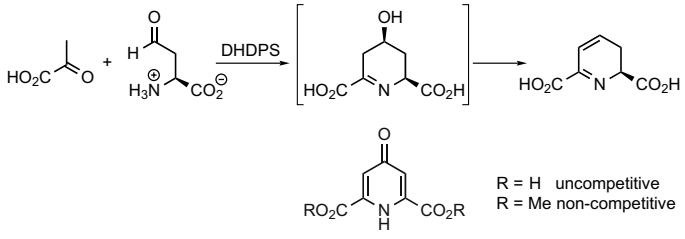
9

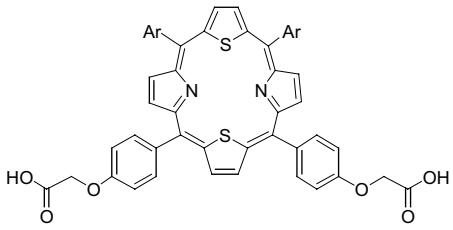
The synthesis and biological evaluation of naphthylcombretastatins, modified on the ethylene bridge, are described.

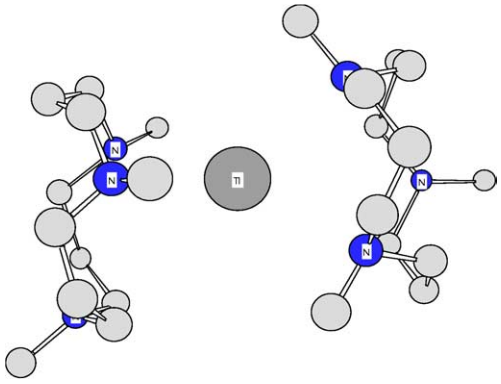
Attempt is made to propose yet another method for the estimation of lipophilicity of a heterogeneous set of 223 compounds. The method is based on the use of topological indices along with equalized electronegativity. The results have shown that excellent results are obtained in multiparametric regression upon introduction of indicator parameters.

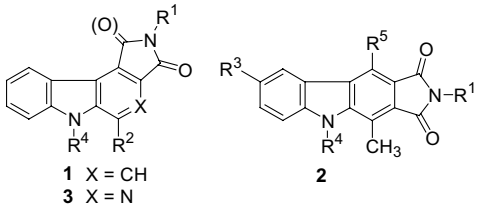
The interaction mechanism of a series of statine-based peptidomimetics with human β-secretase was studied using molecular docking and 3D-QSAR approaches. A good correlation between predicted binding free energy and experimental pIC_{50} was discovered, and CoMFA and CoMSIA models with strong predictive capabilities were successfully constructed, providing clear guidelines for designing novel inhibitors as drug leads against Alzheimer's disease.

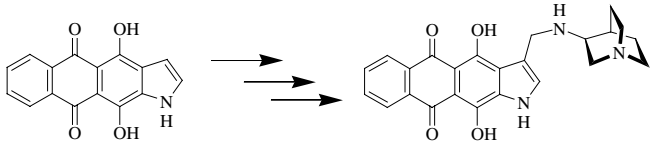




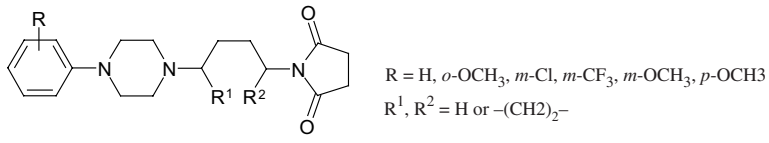


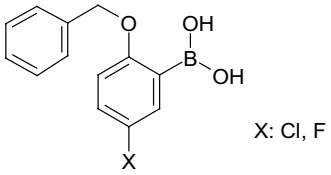




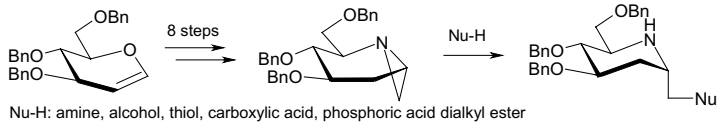


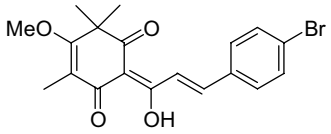
A series of 3-aminomethyl derivatives of 4,11-dihydroxynaphtho[2,3-*f*]indole-5,10-dione was synthesized. Mannich derivatives of 4,11-dihydroxynaphtho[2,3-*f*]indole-5,10-dione with cyclic diamine in their side chain were cytotoxic against cell lines resistant to adriamycin (MDR cell lines).





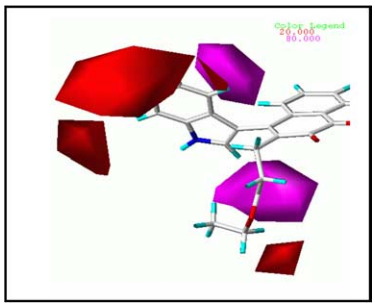
A range of aryl and heteroaryl boronic acids were tested for their in vitro hormone-sensitive lipase inhibitory properties. (2-Benzyloxy-5-fluorophenyl)boronic acid, (2-benzyloxy-5-chlorophenyl)boronic acid and 5-bromothiophene-2-boronic acid were found to be the most potent HSL inhibitors with IC_{50} values of 140, 17 and 350 nM, respectively.





2

New analogs of desmosdumotin C, in which other aromatic rings replaced the terminal phenyl group and the A-ring was modified, were synthesized. The 4-bromophenyl analog (**2**) showed potent cytotoxic activity in four different tumor cell lines.



OTHER CONTENTS

*Corresponding author
ⓘ+ Supplementary data available via ScienceDirect

COVER

Protegrin I is a naturally occurring antimicrobial peptide, whose backbone is constrained into a hairpin conformation by two disulfide bridges. The family of β-hairpin mimetics described, rely on the hairpin inducing properties of a template to achieve the same backbone conformation. The mimetics can be modified synthetically to optimize antimicrobial activity and reduce toxicity, and may provide access to novel antibiotics to combat the ever growing threat posed by resistant microorganisms [Robinson, J. A.; Shankaramma, S. C.; Jetter, P.; Kienzl, U.; Schwendener, R. A.; Vrijbloed, J. W.; Obrecht, D. *Bioorg. Med. Chem.* **2005**, *13*, 2055–2064].

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ISSN 0968-0896