

论文

3-苯基-4(1H)喹啉酮羟基衍生物的合成及其抗骨质疏松活性

王晓莉;徐鸣夏;邓力;周国川;郑虎

四川大学华西药学院, 四川 成都 610041

摘要:

目的设计并合成7-羟基-3-(取代)苯基-4(1H)喹啉酮化合物及其相应的5-羟基-3-(取代)苯基-4(1H)喹啉酮化合物并考察其抗骨质疏松活性。方法以间氨基酚为原料,选择改良的Gould-Jacobs反应路线同时合成7-羟基-3-(取代)苯基-4(1H)喹啉酮4个(A<sub>1~4</sub>)及其相应的5-羟基-3-(取代)苯基-4(1H)喹啉酮4个(B<sub>1~4</sub>),通过骨细胞筛选实验以及羟磷灰石吸附实验分别考察其促骨形成作用和趋骨性。结果共合成了新化合物8个(A<sub>1~4</sub>,B<sub>1~4</sub>),其结构经IR,MS,<sup>1</sup>HNMR和元素分析确证。骨细胞筛选实验结果表明,B<sub>3</sub>有促骨形成作用,但作用弱于芒柄花黄素;羟磷灰石吸附实验结果表明,羟磷灰石对B<sub>1</sub>,B<sub>2</sub>和B<sub>4</sub>有一定的吸附,其中对B<sub>1</sub>和B<sub>2</sub>的吸附作用强于四环素。结论 5-羟基-3-(取代)苯基-4(1H)喹啉酮化合物有促骨形成作用并具有一定的趋骨活性。

关键词: 3-苯基-4(1H)喹啉酮衍生物 抗骨质疏松 促骨形成 趋骨性 羟磷灰石

SYNTHESIS AND ANTI OSTEOPOROSIS ACTIVITY OF 3-PHENYL-4(1H) QUINOLINONE DERIVATIVES

WANG Xiao-li; XU Ming-xia; DENG Li; ZHOU Guo-chuan; ZHENG Hu

Abstract:

AIMTo design and synthesize 7-hydroxy-3-(substituted) phenyl-4(1H) quinolinone and 5-hydroxy-3-(substituted) phenyl-4(1H) quinolinone and to study the antiosteoporosis activity of these compounds. METHODSThe compounds of 7-hydroxy and 5-hydroxy were prepared simultaneously by improved Gould-Jacobs reaction and resorcin was used as starting material. Eight compounds (A<sub>1~4</sub>, B<sub>1~4</sub>) were synthesized and their chemical structures were determined by IR, MS, <sup>1</sup>HNMR and elemental analysis. Their osteoplastic activity was evaluated by the absorptive test to Ca<sup>2+</sup> of hydroxyapatite crystal. RESULTSCompounds (A<sub>1~4</sub>,B<sub>1~4</sub>) are new compounds. Compounds B<sub>1</sub> and B<sub>2</sub> showed antiosteoporosis activities and was stronger than the control drug of tetracycline. CONCLUSIONCompounds B<sub>1</sub> and B<sub>2</sub> are worthy to be intensively studied.

Keywords: antiosteoporosis osteoplastic activity osteocyte chemotaxis hydroxyapatite 3-phenyl-4(1H) quinolinone derivatives

收稿日期 2001-10-30 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者: 王晓莉

作者简介:

参考文献:

本刊中的类似文章

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(133KB)
- ▶ [HTML全文]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ 3-苯基-4(1H)喹啉酮衍生物
- ▶ 抗骨质疏松
- ▶ 促骨形成
- ▶ 趋骨性
- ▶ 羟磷灰石

本文作者相关文章

- ▶ 王晓莉
- ▶ 徐鸣夏
- ▶ 邓力
- ▶ 周国川
- ▶ 郑虎

PubMed

- ▶ Article by
- ▶ Article by
- ▶ Article by
- ▶ Article by
- ▶ Article by

|      |                      |      |                                   |
|------|----------------------|------|-----------------------------------|
| 反馈人  | <input type="text"/> | 邮箱地址 | <input type="text"/>              |
| 反馈标题 | <input type="text"/> | 验证码  | <input type="text" value="3326"/> |