高等学校化学学报 2008, 29(9) 1791-1796 DOI: ISSN: 0251-0790 CN: 22-1131/O6

论文

鹿茸寡肽的制备及其促成骨细胞的增殖作用

王华[1,2], 林喆[3], 刘强[2], 蔡明军[2], 徐力[1], 张学忠[1]

1. 吉林大学分子酶学工程教育部重点实验室, 长春 130021;
2. 吉林大学中日联谊医院, 长春 130033;
3. 长春中医药大学中医药与生物工程研究开发中心, 长春 130117

摘要:

从梅花鹿鹿茸中提取了天然鹿茸总多肽(VATP). 在进一步分离纯化的过程中, 筛选出具有促进成骨细胞增殖的高活性肽组分(VAP-B), 并通过制备型HPLC对其纯化, 得到了分子量分布约为200~600的小肽活性组分(VAP-B_2). 细胞周期分析结果表明, 鹿茸肽VAP-B_2组分促进了人成骨肉瘤细胞OS-732的周期转化, 使其细胞周期S期细胞指数明显增加, 即表现为S期DNA含量明显提高. 碱性磷酸酶(ALP)活性检测结果表明, 随着鹿茸肽VAP-B_2剂量的增加, ALP的活性明显增加. 这与成骨细胞增殖分化及成熟过程中, 细胞的周期性变化和骨形成标志物碱性磷酸酶水平的明显增高相符.

关键词: 梅花鹿鹿茸 鹿茸肽 分离与纯化 生理活性 成骨细胞

Preparation of Velvet Antlers Small Peptides and Stimulating Effects on Osteosarcoma Cell Proliferation

WANG Hua[1,2], LIN Zhe[3], LIU Qiang[2], CAI MING-Jun[2], XU Li[1*], ZHANG Xue-Zhong[1*]

1. Key Laboratory for Molecular Enzymology and Engineering of the Ministry of Education, Jilin University, Changchun 130021, China;
2. China-Japan Union Hospital of Jilin University, Changchun 130033, China;
3. Research and Exploitation Center of Chinese Medicine and Bioengineering, Changchun University of Chinese Medicine, Changchun 130117, China

Abstract:

The native total peptides(VATP)were extracted from velvet antlers of sika deer(*Cerv us nippon* Temminck). A high active peptide component(VAP-B)stimulating proliferation of a human osteosarcoma cells was isolated from VATP. Finally, a further purified active peptide component(VAP-B_2) with molecular weight distribution from about 200—600 was obtained from VAP-B by preparative HPLC. VAP-B_2 was able to enhance the average content of DNA in S phase. And also the alkali phosphatase(ALP) activity in osteosarcoma cells increased obviously with the increase of VAP-B_2 dosage and treatment time. The results are consistent with cell cycle variation and ALP level as a marker of bond formation during osteocyte proliferation and differentiation, as well as maturity. The results obtained in this study provide a clue to explore a new peptide medicine from velvet antlers for therapy of osteoporosis.

Keywords: Velvet antlers of sika deer Sika deer peptides Isolation and purification Physiologic activity Osteosarcoma cells

收稿日期 2008-02-29 修回日期 1900-01-01 网络版发布日期

DOI:

基金项目:

通讯作者: 张学忠, 徐力

作者简介:

参考文献：

1. HUO Yu-Shu(霍玉书), HUO Hong(霍虹), Winters W. D., *et al*.. Tradit. Chin. Drug Res. & Clin. Pharmacol.(中药新药与临床药理)[J], 1997, 8(2): 79—81
2. FAN Yu-Lin(范玉林), XING Zeng-Tao(邢增涛), FEI Gong-Qing(卫功庆). J. Econ. Anim.(经济动物学报)[J], 1998, 2(1): 27—31
3. DING Chang-Hai(丁长海), WU Cheng-Yi(吴成义). Acta Univ. Med. Anhui(安徽医科大学学报)[J], 1995, 30(1): 4—6
4. ZHOU Qiu-Li(周秋丽), GUO Ying-Jie(郭颖洁), WANG Li-Juan(王丽娟), *et al*.. Acta Pharmacol. Sin.(中国药理学报)[J], 1999, 20(3): 279—282
5. GUO Ying-Jie(郭颖洁), ZHOU Qiu-Li(周秋丽), LIU Ping(刘平), *et al*.. Chin. J. Biochem. Pharm.(中国生化药物杂志)[J], 1998, 19(2): 74—76
6. WENG Liang(翁梁), ZHOU Qiu-Li(周秋丽), WANG Li-Jian(王丽娟), *et al*.. Acta Pharm. Sinica(药学学报)[J], 2001, 36(11): 817—820
7. YANG Lu-Lu(杨璐璐), CHI Cheng(迟程). J. Yunnan Coll. Tradit. Chin.(云南中医学院学报)[J], 1995, 18(4): 19—23
8. ZHOU Qiu-Li(周秋丽), LIU Yong-Qiang(刘永强), WANG Ying(王颖), *et al*.. Chin. J. Chin. Mater. Med.(中国中药杂志)[J], 2001, 26(10): 699—702
9. Lowry O. H., Rosebrough N. J., Farr A.L., *et al*.. J. Biol. Chem.[J], 1951, 193: 265—275
10. Russell C. A., Vindelov L. L.. J. Immunol. Methods[J], 1998, 217(1/2): 165—175
11. Mosmann T.. J. Immunol. Meth.[J], 1983, 65: 55—65
12. DU Zhuo-Min(杜卓民). Practical Tissue Technology, 2nd Edition(实用组织学技术, 第二版)[M], Beijing: People's Medical Publishing House, 1998: 321—322
13. Bad I., Gazit D., Chorev M., *et al*.. EMBO J.[J], 1992, 11(5): 1867—1873
14. Greenberg Z., Chorev M., Muhlrad A., *et al*.. J. Clin. Endocrinol. Metab.[J], 1995, 80(8): 2330—2335
15. Laemmli U. K.. Nature[J], 1970, 227(259): 680—685

本刊中的类似文章

1. 屈阳, 李振声, 杨帮成, 张兴栋 .成骨肿瘤细胞在纳米氧化钛陶瓷表面的生物活性研究[J]. 高等学校化学学报, 2007,28(7): 1288-

文章评论

序号	时间	反馈人	邮箱	标题	内容
1	2009-11-16	frsahfkjsdagjk	hsjkafh@sdk.com	ugg boots	Ugg Boots Sale Online Ugg Boots Discount Uggs Di Ugg Ugg Shoes Sa Sale Cheap Ugg Cheap Uggs ugg