高等学校化学学报 2008, 29(7) 1390-1392 DOI: ISSN: 0251-0790 CN: 22-1131/O6

论文

人CuZn-SOD的分子改造及在毕赤酵母中的表达

曲和之, 杜姗姗, 郝东云, 张雷, 黄露, 王晓平

吉林大学分子酶学工程教育部重点实验室, 长春 130021

摘要:

为了改善人CuZn-SOD的酶学性质, 在借鉴人细胞外超氧化物歧化酶的特性基础上, 利用分子生物学技术, 在人CuZn-SOD的C末端加入肝素亲和肽构建了人CuZn-SOD工程酶, 并在毕赤酵母中获得表达, 经纯化的工程酶具有较强的肝素亲和性.

关键词: 人铜锌超氧化物歧化酶 肝素亲和性 分子改造 工程酶

Molecular Modification and Expression of Human CuZn Superoxide Dismutase in *pichia pastries*

QU He-Zhi, DU Shan-Shan, HAO Dong-Yun, ZHANG Lei, HUANG Lu, WANG Xiao-Ping*

Key Laboratory for Molecular Enzymology and Engineering, Ministry of Education, Jilin University, Changchun 130021, China

Abstract:

CuZn Superoxide dismutase(CuZn-SOD) is the enzyme that can catalyze the removal of superoxide radicals, which are generated in a variety of biological oxidations. It is a ubiquitous enzyme and provides a defense against oxygen toxicity. To dismutate superoxide radical effectively in and around vascular endothelial cells, we constructed a fusion gene encoding a hybrid SOD(namely HBSOD) consisting of human CuZnSOD and a C-terminal basic peptide that binds to heparin-like proteoglycans. The fusion gene was expressed successfully in *pichia pastries*. The purified HBSOD exhibited a normal SOD activity. The protein also possessed a high binding affinity to heparin proteoglycans.

Keywords: Human CuZn superoxide dismutase Heparin-affinity Molecular modification Engineering enzyme

收稿日期 2007-09-28 修回日期 1900-01-01 网络版发布日期

DOI:

基金项目:

通讯作者: 王晓平

作者简介:

参考文献：

1. Heistad D. D.. Arterioscler Thromb Vasc Biol.[J], 2006, 26(4): 689—695
2. Ames B. N. , Shigenaga M. K., Hagen T. M.. Proc. Natl. Acad. Sci. USA[J], 1993, 90: 7915—7922
3. Crow J. P., Beckman J. S.. Adv. Exp. Med. Biol.[J], 1996, 387: 147—161
4. McCord J. M., Fridovich I.. J. Biol. Chem.[J], 1969, 244(22): 6056—6063
5. Karlsson K., Sandstrom J., Edlund A., *et al*.. Free Rad. Biol. Med.[J], 1993, 14: 185—190
6. Lowry O. H., Rosebrough N. J., Farr A. L., *et al*. . J. Biol. Chem.[J], 1951, 193: 256—275
7. Marklund S. L. , Marklund G.. Eur. J. Biochem.[J], 1974, 47: 469—474
8. Tibell L., Aasa R., Marklund S. L.. Arch. Biochem. Biophys.[J], 1993, 304: 429—433
9. Marklund S. L.. Proc. Natl. Acad. Sci. USA[J], 1982, 79: 7634—7638

本刊中的类似文章

文章评论

序号	时间	反馈人	邮箱	标题	内容
					Buy discount u shoes cheap u shoes cheap ugg rainier buy ugg usa discount ugg ugg 5825 ugg sh

2009-