

论文

煤焦沥青烟提取物对THP-1细胞炎性因子表达影响

宋金燕, 冯斐斐, 李娟, 王威, 姚武, 吴卫东, 吴逸明, 燕贞

郑州大学公共卫生学院劳动卫生学教研室, 河南 郑州 450001

摘要:

目的 探讨煤焦沥青烟提取物(CTPE)对人单核细胞株(THP-1)炎性因子表达的影响。方法 用2 $\mu\text{g}/\text{mL}$ CTPE处理THP-1细胞24、48、72 h,并设立阴性对照组、二甲基亚砜(DMSO)溶剂对照组,real-time PCR检测各组细胞中白介素1 β (IL-1 β)、白介素8(IL-8)、肿瘤坏死因子- α (TNF- α)mRNA的表达水平,酶联免疫吸附试验(ELISA)检测各组细胞培养上清中TNF- α 含量。结果 染毒CTPE 24 h时,染毒组IL-1 β mRNA 表达水平为(2.22 \pm 0.33),均高于阴性对照组和溶剂对照组($P<0.05$);染毒CTPE 72 h时,染毒组IL-8 和TNF- α mRNA 表达水平分别为(4.64 \pm 3.03)、(3.15 \pm 0.22),均高于阴性对照组和溶剂对照组($P<0.05$);与对照组比较,染毒72 h时染毒组细胞培养上清中TNF- α 含量[(538.44 \pm 53.88) pg/mL]升高,差异有统计学意义($P<0.05$)。结论 CTPE刺激单核细胞后可使TNF- α 、IL-1 β 、IL-8表达水平增加。

关键词: 煤焦沥青烟提取物(CTPE) 肿瘤坏死因子- α (TNF- α) 白介素1 β (IL-1 β) 白介素8(IL-8) 单核细胞

Effect of coal tar pitch smoke extracts on expression of inflammatory cytokines of THP-1 cells

SONG Jin-yan, FENG Fei-fei, LI Juan, et al

Department of Occupational Health, College of Public Health, Zhengzhou University, Zhengzhou, Henan Province 450001, China

Abstract:

Objective To explore the effect of coal tar pitch smoke extracts(CTPE)on the expression of inflammatory cytokines in monocyte-macrophages(THP-1).Methods THP-1 cells were treated with or without 2 $\mu\text{g}/\text{mL}$ CTPE(dimethylsulfoxide as vehicle) for different time(24,48,and 72 hours).The expression of interleukine 1- β (IL-1 β),interleukine 8,IL-8) and tumor necrosis factor(TNF- α) mRNA were determined by real-time PCR.The release of TNF- α was determined using enzyme-linked immunosorbent assay(ELISA).Results The expressions of TNF- α ,IL-1 β ,and IL-8 mRNA of CTPE treatment groups were significantly different from those of the control group($P<0.05$ for all).The expression level of IL-1 β mRNA was 2.22 \pm 0.33 after treated with 2 $\mu\text{g}/\text{mL}$ CTPE for 24 hours,while the IL-8 and TNF- α mRNA level were 4.64 \pm 3.03 and 3.15 \pm 0.22 for 72 hours,all of which were higher than those of control and blank groups ($P<0.05$).The release of TNF- α for 72 hours treatment group was 538.44 \pm 53.88 pg/mL,which was higher than that of other groups($P<0.05$).Conclusion CTPE could promote THP-1 cells to express TNF- α ,IL-1 β ,and IL-8.

Keywords: coal tar pitch smoke extract TNF- α IL-1 β TNF- α IL-8 monocyte

收稿日期 2012-11-26 修回日期 网络版发布日期

DOI: 10.11847/zgggws2013-29-11-19

基金项目:

国家自然科学基金(81001240;81001239)

通讯作者: 燕贞,E-mail:yanzhen@zzu.edu.cn

作者简介:

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(935KB)
- ▶ [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

- ▶ 煤焦沥青烟提取物(CTPE)
- ▶ 肿瘤坏死因子- α (TNF- α)
- ▶ 白介素1 β (IL-1 β)
- ▶ 白介素8(IL-8)
- ▶ 单核细胞

本文作者相关文章

- ▶ 宋金燕
- ▶ 冯斐斐
- ▶ 李娟
- ▶ 王威
- ▶ 姚武
- ▶ 吴卫东
- ▶ 吴逸明
- ▶ 燕贞

PubMed

- ▶ Article by SONG Jin-yan
- ▶ Article by FENG Fei-fei
- ▶ Article by LI Juan
- ▶ Article by et al
- ▶ Article by
- ▶ Article by
- ▶ Article by
- ▶ Article by

参考文献:

[1] 安社娟,陈家,陈学敏,等.多环芳烃致癌的分子毒理学研究进展[J].国外医学:卫生学分册,2005,32(1):10-13.

[2] 李卫民,吴逸明.大鼠肺癌发生发展动物模型的构建[J].河南医科大学学报,2000,35(3):232-235.

[3] Gibbs GW,Armstrong B,Sevigny M.Mortality and cancer experience of Quebec aluminum reduction plant workers.Part 2:mortality of three cohorts hired on or before january 1,1951[J].J Occup Environ Med,2007,49(10):1105-1123.

[4] Moon MK, Lee YJ, Kim JS, et al. Effect of caffeic acid on tumor necrosis factor-alpha-induced vascular inflammation in human umbilical vein endothelial cells[J]. Biol Pharm Bull, 2009, 32(8): 1371-1377.

[5] 李智涛,燕贞,赵勇,等.煤焦沥青烟提取物致支气管上皮细胞系恶性转化细胞中Bub1和Mad2表达水平改变[J].中国职业医学,2010,37(6):454-457.

[6] 王伟,郝建.重症肺炎并心力衰竭患者血清 TNF- α 、IL-6、NO、CK-MB 的变化及其临床意义[J].临床肺科杂志,2007,12(11):1213-1214.

[7] Li ZT, Wu YJ, Zhao Y, et al. Analysis of coal tar pitch and smoke extract components and their cytotoxicity on human bronchial epithelial cells[J]. Journal of Hazardous Materials, 2011, 186(2-3): 1277-1282.

[8] 周凡静,张少峰,冯斐斐,等.单核巨噬细胞在煤焦沥青烟提取物诱导永生化人支气管上皮细胞恶变中的作用[J].中华劳动卫生职业病杂志,2012,30(4):241-245.

[9] Szlosarek P, Charles KA, Balkwill FR. Tumour necrosis factor-alpha as a tumour promoter[J]. Eur J Cancer, 2006, 42(6): 745-750.

[10] 叶菊凤,罗炳德.高温及内毒素复合因素对 IL-1 β mRNA表达影响[J].中国公共卫生,2010,26(2):214-215.

[11] 陈振勇,冯贤松,杨鹏,等.高浓度胆汁诱导单核细胞前炎症反应[J].华中科技大学学报:医学版,2011,40(4):433-436.

[12] 阎雯,黄妮娜,贾小芳,等.IL-1B和TNF-A表达量与新生儿缺血缺氧性脑病脑损伤程度的相关性[J].细胞与分子免疫学杂志,2010,26(7):693-694.

[13] 王睿黎,张婷,马政文,等.凝血因子XII刺激外周血单核细胞对卵巢癌细胞侵袭能力的影响[J].中国实用妇科与产科杂志,2009,25(8):594-597.

[14] 廖品琥,黄冰.白细胞介素-1 β 激活核转录因子-kB介导A549细胞分泌白细胞介素-8的研究[J].临床麻醉学杂志,2007,23(1):43-45.

本刊中的类似文章

- 王琰,张佩,梁灵君,孙雪芳,王洪新.人参皂苷对肿瘤坏死因子- α 致心肌肥大抑制作用[J].中国公共卫生,0(0):0-0
- 贺晨,孙鸿燕,邵丽筠,刘金华,张春秀,刘娅.4种病原菌多重PCR检测方法建立[J].中国公共卫生,2011,27(4):525-527
- 曾静,魏海燕,张西萌,陈广全,饶红,张惠媛,汪琦,张昕.进口三文鱼单核细胞增生李斯特菌污染检测[J].中国公共卫生,2008,24(8):1003-1004
- 李盛丰,赵姣,钟名华,夏国亮,邓灵福,张筱丽,冯莹颖,罗勤.单增李斯特菌不同PCR快速检测方法比较[J].中国公共卫生,2008,24(8):1021-1023
- 刘桂华,乔凤,黄鑫,龚云伟.食品中单增李斯特菌PCR检测方法建立与评价[J].中国公共卫生,2007,23(1):60-61
- 裴银辉,高辉,张晨光,马立人.超抗原SEB诱导外周血单核细胞杀伤肿瘤效果[J].中国公共卫生,2006,22(3):323-324
- 徐嘉琪,张冬燕.表达Tie2基因单核细胞在肿瘤血管生成中作用[J].中国公共卫生,2013,29(9):1382-1384

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.)

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="2992"/>