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(收稿: 1999-03-18; 修回: 1999-07-22)
(编辑 王 红)

Establishment of PCR to amplify D-loop and its 5′and 3′ends of porcine mitochondrial DNA*

Liu Zhonglu, Wei Hong (Center of Laboratory Animals, Third Military Medical University, Chongging, 400038)

Abstract Objective: To establish the PCR technique for the amplification of the D-loop and its 5′and 3′ends of porcine mitochondrial DNA (mtDNA). Methods: Three pairs of primers were designed to amplify the D-loop and its 5′and 3′ends of mtDNA of Xishuangbanna small-ear pig of the inbred stain, Guizhou Miniature fragrant pig, Guangxi Bama miniature pig, Rongchang pig, large Yorkshire pig and Landrace pig. The amplification products were detected with electrophoresis on 1.2% agarose gel. Results: Clearly visible amplification bands were obtained and the fragment length was the same as that reported previously. Conclusion: Our findings suggest that the design of the primers is reasonable and the procedures are reliable. The PCR technique we have established can be used in PCR-RFLP to study of D-loop of mtDNA, in SSCP to study the 5′and 3′ends of the D-loop of mtDNA, in SSCP to study the 5′and 3′ends of the D-loop and in direct sequencing.

Key words PCR; mitochondral DNA D-loop; 5′end of D-loop; 3′end of D-loop; pig

* This project was supported by the National Natural Science Foundation of China, No. 39830190

腹泻脱水婴儿肌注小诺霉素后致急性肾衰 1例报告 个案与短篇

A case of acute renal failure caused by intramuscular injection of Micronomicin Sulfate for treating dehydration after diarrhea in infants

唐红梅* (第三军医大学附属西南医院小儿科) 重庆, 400038

1 临床资料

患儿, 男, 8个月。因"腹泻 4 d,发热 1 d,昏迷 30 min"收入院。入院时诊断为"婴儿腹泻伴重度脱水"。入院前 1 d曾在一私人诊所肌注小诺霉素,剂量不详。入院时肾功: 钠 144 mmol/L, 钾 4.03 mmol/L, 氯 106 mmol/L, 二氧化碳结合力 30 mmol/L, 血糖 4.5 mmol/L, 尿素氮 6.9 mmol/L。给以补液等治疗,脱水纠正,尿量增加。但于入院后 18 h,出现急性肾功能衰竭,表现为纳差、烦躁,心率 180次/min,呼吸 50次/min,进行性少尿、进行性浮肿等,血液检查: 钠 139.9 mmol/L, 钾 3.14 mmol/L, 氯 109.98 mmol/L, 二氧化碳结合力 24 mmol/L, 尿素氮 109.98 mmol/L, 肌酐 287.08μmol/L, 血糖 12.8 mmol/L, 渗透压 324.9 mOsm/L, 尿酸 1 425μmol/L, 磷 2.23 mmol/L, 经过结肠透析、持续呼气末正压供氧、速尿、地塞米松等治疗,尿素氮、肌酐进行性增高至 34.73 mmol/L及 371.4μmol/L, 抢救无效,于入院后 95 h死亡。

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* 唐红梅, 女, 30岁, 护师, 大专

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IGF-Ⅰ R反义细胞不能在软琼脂中生长,说明IGF-Ⅰ R反义基因阻抑了 IGF-Ⅰ R的表达,使其介导 7721细胞增殖能力下降,其不依赖于锚着生长的恶性表型丧失。本研究表明,IGF-Ⅰ R在肿瘤增殖、恶性表型的维持具有十分重要的作用,反义 IGF-Ⅰ R基因能够阻抑肿瘤细胞的增殖、促进凋亡,逆转恶性表型。以生长因子受体为靶向目标,为肝癌生物治疗的应用奠定了一定的基础。

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(收稿: 1999-01-19;修回: 1999-08-31)

(编辑 汪勤俭)

The inhibitory effects of IGF-Ⅰ R antisense gene on the growth of human hepatoma cell line*

Zhou Ping, Zhou Zicheng, Chen Wensheng, Yong Jianmin (Department of Gastroenterology, Southwest Hospital, Third Military Medical University, Chongqing, 400038)

Abstract **Objective**: To observe the effects of IGF-Ⅰ R antisense gene on the growth of the human hepatoma cell line 7721. **Methods**: The human hepatoma cells were stably transfected with a plasmid vector expressing IGF-Ⅰ R cDNA in antisense orientation using liposomes and then the growth cycle of the cells was observed. The apoptosis of the cells was studied with flow cytometry, the cell growth with MTT method and cloning on soft agar. **Results**: IGF-Ⅰ R antisense gene inhibited the growth of the cells 7 d after transfection. The proportion of G_1/G_2 phase cells was increased (63.9% *vs* 49.8% before transfection) and that of S phase cells significantly decreased (19.3%). The rate of cell apoptosis was elevated (5.89%). The cells were unable to grow on soft agar after transfection with IGF-Ⅰ R antisense gene but grew normally before transfection or after transfection with IGF-Ⅰ R sense gene. **Conclusion**: IGF-Ⅰ R antisense gene exerts significant inhibition on the growth of human hepatoma cell line 7721.

Key words IGF-Ⅰ R; antisense gene; liver neoplasms; apoptosis

* This project was supported by the National Natural Science Foundation of China, No. 39800063

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2 讨论

急性肾功能衰竭根据其病因可分为肾前性、肾性、肾后性[1]。此患儿有腹泻脱水及肌注小诺霉素史,故其急性肾衰原因考虑为:一方面,由于脱水后血容量不足导致肾血流量减少对肾功能的影响;另一方面,在肾缺血的基础上加用小诺霉素,而小诺霉素本身就对肾脏有毒性,可致急性间质性肾炎[2],双重作用的后果就导致了急性肾衰。此病例可考虑为急性肾前性、肾性肾衰,在治疗中结肠透析的效果不尽人意,这也与药物性间质性肾炎本身治疗困难有关。从中值得借鉴的是在婴儿腹泻脱水时应避免使用肾毒性药物,治疗上需要我们吸取教训的是在肾衰的治疗中应及早采用腹膜透析。

关键词 腹泻;小诺霉素;肾衰

中图法分类号 R723.11; R723.12; R726.92

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(收稿: 1999-04-08;修回: 1999-07-28)

(编辑 王 红)

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