



Establishment of Rat Spontaneous Mammary Adenocarcinoma Tumor Strain to Generate the Type C Oncovirus and its Pathological Studies

Yao Yangzheng

Laboratory Animal Center, Shaanxi Academy of Traditional Chinese Medicine, Xian 710003

[Objective] The present work is to establish rat spontaneous mammary adenocarcinoma tumor strain to produce the type C oncovirus and investigate the pathological characteristics of rat spontaneous mammary adenocarcinomas caused by type C oncovirus. Methods: The tumor strain of rat mammary adenocarcinomas was established by alternate descent generations of carcinoma struma and cell suspension. For pathological observation, rat mammary primary adenocarcinoma and implant adenocarcinoma were respectively fixed in 10% formaline, embedded in paraffins, routinely stained with HE and Ag. For electron microscope observation, rat mammary primary carcinoma and implant carcinoma were double fixed in 2.5% glutaraldehyde and 1% osmic acid respectively, embedded in Epon 812, ultrathin sectioned, double stained with uranium acetate and lead citrate, and observed under transmission electron microscope (TEM). [Results] The volume of rat mammary primary carcinoma cells is quite small, only 10 μm in diameter. The typical tubular structures are found to be in such shapes as of globe, pappila, tortuous ribbon and whorl. The carcinoma cells are separated into irregular nest structure by the reticular fibres after Ag staining. The above-mentioned shows that, as a type of rat mammary epithelial anaplastic adenocarcinomas, rat mammary carcinoma is originated from epithelial tissues. The implant carcinoma cells are round, cubic, and polygonal in shape, and carcinoma gigantic cells, pale cells and the like appeared, which are arranged in such structures as of nest, layer, trabecula, pappila, glomerate, adenocarcinoma tubule, and space, with heteromorphosis notable. The carcinoma cells are irregular in size, with large nuclei and increased nucleolus. Besides, there are bundles of tension protofibril in cytoplasm and seldom seen secretory granules. Among the cells there are primary gland cavities and the desmosome. The type C oncovirus particles are discovered among the carcinoma cells and in their cytoplasm, which are 100nm in diameter, in the shape of globe and with external envelopes endomembranes and central cores. [Conclusion] This is the first time that rat spontaneous mammary adenocarcinomas have been established to generate type C oncovirus tumor strain. It makes up a type of rat mammary epithelial anaplastic adenocarcinomas. And its pathological morphology is of polymorphom.

[Key Words] Mammary neoplasms; Experimental type C oncovirus, Rat, Inbred strains, Pathology, Tumor strain.

禽流感 H5N1 型病毒对沙鼠致病性的初步研究

刘忠华 刘香梅 赵维波 黄韧

广东省实验动物监测所, 广州 510260

[目的] 观察禽流感 H5N1 型病毒对沙鼠的致病性; [方法] 在生物安全三级实验室, 将禽流感 H5N1 型病毒通过滴鼻接种乙醚麻醉后沙鼠, 观察 14 天, 记录沙鼠的体温体重、临床症状、病理变化、病毒分离及抗体变化; [结果] 沙鼠感染后发病主要表现在第 2 天至第 6 天, 攻毒组沙鼠出现反应迟钝、皱毛、弓背、食欲下降、呼吸急促、打堆等症状, 攻毒组沙鼠的体温降低和体重减轻, 死亡率为 44%, 在第 8 天检出抗体, 主要病理变化表现为肺出现严重淤血、水肿、出血, 镜下可见肺间质充血, 血管周围炎性细胞浸润, 肝和胸腺淤血, 肾出血, 肾小管变形。

[关键词] 沙鼠; 禽流感 H5N1 型病毒; 致病性

The study of Pathogenicity of Avian Influenza H5N1 Virus in Gerbil

LIU Zhong-hua, LIU Xiang-mei, Zhao Wei-bo, HUANG Ren

Guang Dong Laboratory Animals Monitoring Institute, Guang Zhou 510260 China

To investigate the pathogenicity of avian influenza virus in Gerbil Anesthetized gerbils were inoculated with avian influenza virus in biosafety level 3 laboratory. Fourteen days after inoculation, clinical signs were observed and the blood samples were collected to analyze anti-AIV antibody. Tissue samples from lungs, livers, and kidneys were used to virus isolation and histopathology. Result showed that the H5N1 AIV caused severe disease in gerbils mainly between day 2 p.i and 6 p.i, which characterized by ruffled fur, inappetence, hunched-back posture, labored breathing, hypothermia, weight loss. The death rate was 44%. Antibody was detectable from day 10. P. I. The histopathologic examinations showed variable degrees of lesions including congestion and hemorrhage in lungs, livers, kidneys. The lesions of the lungs showed interstitial pneumonia, dropsy and configuration breakage.

[Key words] Gerbil; Avian influenza (H5N1) virus; Pathogenicity.

禽流感 H5N1 病毒感染 BALB/c 小鼠后多器官病变初探

张钰 赵维波 闽凡贵 刘香梅 王静 刘忠华 黄韧

广东省实验动物监测所,广州 510260

为了研究禽流感 H5N1 病毒在各个器官的增殖和病理变化,在生物安全实验室,我们将禽流感 H5N1 病毒通过尾静脉接种 BALB/C 小鼠。结果小鼠在不经过适应的情况下,直接感染发病,甚至死亡。在观察的 7 天内,感染小鼠临床症状主要表现为呼吸急促,体温、体重下降。尸检表现肺出血,心外膜坏死以及肝脏的坏死。组织病理检查表现心、肝、肺等多器官的病变。肺的病变伴有纤维化的弥漫性肺泡损伤;心肌外膜大量淋巴细胞浸润、坏死;肝细胞大量坏死,淋巴细胞浸润。心、肝的坏死病变在 H5N1 禽流感病毒相关的研究中未见报道。经过对各个组织器官的病毒载量的检测,未发现病毒在各个病变组织中的复制。免疫组化的检测,各个组织中也未检出阳性的细胞反应。因此,我们认为 H5N1 禽流感病毒感染小鼠引起多个器官组织的损伤,甚至死亡,不是病毒在器官的复制,而可能是病毒感染小鼠,产生炎症细胞因子的高度表达,损伤多个器官组织所致。

[关键词] 禽流感 H5N1 病毒, BALB/C 小鼠, 尾静脉接种, 多器官病变

Study of the multiple-organ pathology for BALB/c Mice Infected with Avian Influenza A (H5N1) virus

Zhang Yu, Zhao Weibo, Mian Fangui, Liu Xiangmei, Wang Jing, Liu Zhonghua, Huang Ren

Guangdong Laboratory Animals Monitoring Institute, Guangzhou, China PR, 5100260

To study the pathology of H5N1 avian influenza virus, H5N1 avian influenza virus was inoculated the tail intravenous to the BALB/c male mice and the mice were infected and died. With 1-3 days, the mice began to show acute respiratory distress, decreased activity, less food and water intake, weight and temperature declined. The death of the mice was occurred in 2-3 days. From 4 to 7 days, the clinical symptom of the mice was resumed. The infected mice showed lung