

increases, as the donor is younger. We further studied the stem cell portion of each keratinocyte culture in the 4th–10th passage. Our data show that low passage cells contain more stem cells than high passage cells. Recently, a homologue of the tumor suppressor p53, p63 is described as an epidermal stem cell marker. Therefore, human skin biopsies and living skin equivalents were stained with p63-specific antibody and specific markers of proliferating cells, and immunohistochemical analysis was performed. Our results revealed that cells forming the basal layer of human epidermis express both p63 and PCNA.

[PA1-75] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

The influence of extremely low frequency magnetic field on cardiovascular response

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There have been some reports showing that cardiovascular response is affected by exposure to extremely low frequency magnetic field (ELF-MF). In this experiment, we intended to observe if ELF-MF affects the basal level of cardiovascular response and effect of drugs acting on sympathetic nervous system. Rats exposed to MF (60 Hz, 20 G) for 1 or 5 days and sham were anesthetized with pentobarbital-Na. Carotid artery and jugular vein were intubated to measure blood pressure (BP) and inject drug respectively. We used the Lead II method to record the electrocardiogram (ECG) which checks heart rate (HR), PR interval, QRS interval, QT interval. In terms of the basal level, there was no difference among sham and MF-1, MF-5 in all of HR, PR interval, QRS interval, QT interval. (-) Dobutamine (b-1 receptor selective agonist) was administered to sham and MF-1, at dose of 10, 20, 50, 100 mg/kg, which didn't affect mean BP, pulse pressure, PR interval, and QRS interval. However there were some changes as the increase of HR and decrease of QT interval. Though both of HR and QT interval showed the changes, the degree of the response of sham was larger than that of MF-1, which wasn't a significant difference. In futher study, we will elucidate influence of more drugs acting on sympathetic nervous system.

[PA1-76] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

The effects of extremely low frequency magnetic field on bicuculline, picrotoxin, NMDA-induced seizures in mice

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Some experiments have been reported that magnetic fields can cause the change of numerous neurotransmitters including excitatory and inhibitory transmitters, which are involved in seizures. In this study we aimed to examine the effect of extremely low frequency magnetic field (ELF-MF) on the sensitivity of seizure response to bicuculline, picrotoxin and NMDA in mice. Mouse were exposed to sham or 20 G ELF-MF for 24 hours and then convulsants were administered i.p. at various doses. Seizure induction time and duration time were measured and LD50(lethal dose) and CD50(convulsant dose) of clonic and tonic convulsion were calculated. Then analysis of glutamate, glycine, taurine, and GABA of mouse brain was accomplished by HPLC. Mice exposed to ELF-MF showed moderately decreased CD50 and LD50 on the bicuculline-induced seizure. But ELF-MF increased them on the NMDA and picrotoxin-induced seizures. These results suggest that extremely low frequency magnetic fields may change the sensitivity of seizure response to each convulsants in rodents. The further study should be taken to elucidate the mechanism of MF's effect on seizure.