guinea pig as a model, the present study investigated the possibility of a Cl−/HCO3 exchanger, solute carrier family 26A3 (SLC26A3), operating with CFTR during capacitation. Depleting Cl−, even in the presence of HCO3−, abolished sperm capacitation and vise versa, indicating the involvement of both anions in the capacitation process. Sperm capacitation, could be reduced by antibodies of SLC26A3 with a concentration dependent manner. Similarly, HCO3−-dependent increase in intracellular pH and cAMP level as well as another capacitation-associated event, sperm hyperactivated motility, were also inhibited by SLC26A3 antibody. The RT-PCR results showed that the SLC26A3 was expressed in the mice testis and sperm. Also the expression and localization of SLC26A3 in guinea pig sperm were demonstrated using immunostaining and western blot. Taken together, our results indicate that Cl− is required for the entry of HCO3− necessary for sperm capacitation, implicating the involvement of the Cl−/HCO3 exchanger SLC26A3 in transporting HCO3−, in addition to the previously reported CFTR.

GnRH EXPRESSION AND EFFECT OF ELECTRO-Acupuncture in Rats and Rabbits at Different Development Stages
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To investigate sexual development, central GnRH expression, electrophysiological characteristics in arcuate nucleus (Arc), as well as the effect of electro-acupuncture (EA) in animals at different developmental stages. EA (3Hz) at the same acupoints was performed for 20 min per day in Sprague−Dawley rats for 10 days. GnRH expression in the hypothalamus was determined using RT-PCR and real-time PCR. Testosterone (T) and sperm count in male rabbits were reduced by repeated EA (P<0.01). GnRH expression in rats of the early pubertal group (EPG) and adult group (AG) were significantly depressed by EA at acupoints (P<0.01). EA reduced significantly sperm count at puberty (P<0.01), while didn’t influence body weight (P>0.01) and structures of the gonadal tissues. The repeated EA is a good option that can be considered for regulating the function of the hypothalamus-pituitary-gonadal (HPG) axis during puberty.

SCREENING AND IDENTIFICATION OF A HUMAN ScFv Antibody Fragment Against Follicle-stimulating Hormone Beta (FSH-β)
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The aim of this study was to screen and identify scFv antibody fragment against FSH-β from a human scFv antibody library. Using synthetic FSH-β peptide as coating antigen, the scFv antibody against FSH-β was screened by four times’ combining-eluting-amplifying. The positive antibody was identified by ELISA. The specificity of soluble antibody was identified by ELISA. The affinity of soluble antibody was measured by non-competitive ELISA. The scFv antibody screened was specific for FSH-β. The soluble antibody was also specific for FSH−β, with low cross-reaction with some analogs. Its molecular weight was about 30 kD by SDS-PAGE and its affinity constant was about 2.64×10^7 mol/L. The screened scFv antibody is specific for FSH-β and has long cross-reaction with analogous molecules. It would be further used in specific treatments of immunological contraception and sexual precocity.

BRAIN DERIVED NEUROTROPHIC FACTOR (BDNF) CONTRIBUTES TO THE PAIN HYPERSENSITIVITY FOLLOWING SURGICAL INCISION IN THE RATS
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The pathogenic role of brain derived neurotrophic factor (BDNF) in the incisional pain is poorly understood. The present study explores the role of the BDNF in the incision-induced pain hypersensitivity. Mechanical allodynia was developed rapidly and sustained three days in the hind-paw incision model in the rats. After hind-paw incision, dramatic upregulation of BDNF was observed in the ipsilateral DRG and spinal cord in the lumbar segments as determined by immunohistochemistry. Double-labeling immunofluorescence showed that the increased BDNF in the spinal cord was mainly localized in the neurons but not microglia or astrocytes. Sciatic nerve blockade with lidocaine prevented the increase of BDNF in the DRG and spinal cord. Intrathecal (IT) injection of BDNF antibody greatly inhibited the mechanical allodynia whereas intra-peritoneal (i.p) administration had only marginal effect. Taken together, the present study showed that incision induced the upregulation of BDNF in the DRG and spinal cord through somatic afferent nerve transmission, and the upregulated BDNF contributed to the tactile allodynia in the incisional pain.

REMIFENTANIL MEDIATES BRADYCARDIA AND HYPOTENSION WITH DISTINCT MECHANISMS
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Remifentanil (REM), a short-acting opioid, has been well known to cause much more significant bradycardia and hypotension compared with other opioids such as fentanyl. However, it is still poorly understood and controversial about the mechanism of the REM-mediated bradycardia and hypotension. The present study was aimed to explore the mechanism of REM-mediated bradycardia and hypotension in the rabbit model and the patients for cardiac surgery. Here, we showed that remifentanil caused very short but significant bradycardia and hypotension in the rabbit model and the patients for cardiac surgery. The REM-mediated bradycardia could not be reversed by vagotomy or sympathetic block. In contrast, the hypotension induced by REM could be slightly inhibited by sympathetically antagonists (narrowing) and norepinephrine, but not by vagotomy in addition. REM also caused the fall of blood pressure during the period of cardiopulmonary bypass (CPB) in the patients for cardiac surgery. Taken together, the present study showed that REM induced bradycardia and hypotension with distinct mechanisms. The REM-mediated-bradycardia is likely independent of opioid receptor and sympathetic nervous system. In contrast, REM-mediated-hypotension is likely through acting on the opioid receptor in the sympathetic nervous system indirectly and those in the blood vessels directly.

EFFECT OF MK-801 ON THE CHANGE OF CYTOKINES IN HYPEROXIA-INDUCED LUNG INJURY IN NEONATAL RAT
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