

CN 23-1544/R ISSN 1673-6273

CODEN SXJTA8



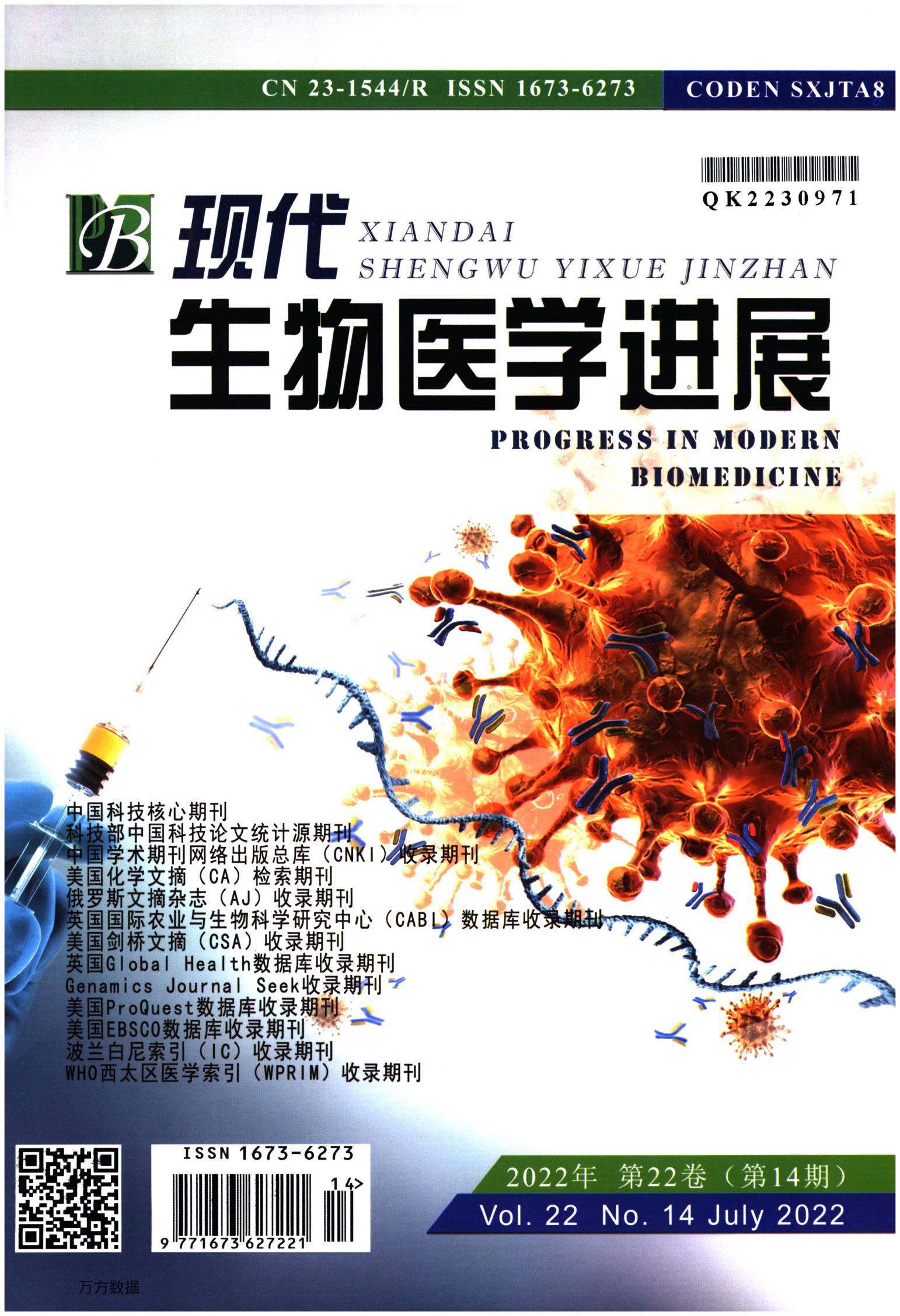
Q K 2 2 3 0 9 7 1



现代 XIANDAI  
SHENGWU YIXUE JINZHAN

# 生物医学进展

PROGRESS IN MODERN  
BIOMEDICINE



中国科技核心期刊  
科技部中国科技论文统计源期刊  
中国学术期刊网络出版总库(CNKI)收录期刊  
美国化学文摘(CA)检索期刊  
俄罗斯文摘杂志(AJ)收录期刊  
英国国际农业与生物科学研究中心(CABI)数据库收录期刊  
美国剑桥文摘(CSA)收录期刊  
英国Global Health数据库收录期刊  
Genomics Journal Seek收录期刊  
美国ProQuest数据库收录期刊  
美国EBSCO数据库收录期刊  
波兰白尼索引(IC)收录期刊  
WHO西太区医学索引(WPRIM)收录期刊



ISSN 1673-6273



9 771673 627221

2022年 第22卷(第14期)

Vol. 22 No. 14 July 2022

# 现代生物医学进展

XIANDAI SHENGWUYIXUE JINZHAN

半月刊 2001年4月创刊 第22卷 第14期 2022年7月30日出版 Progress in Modern Biomedicine

主 管: 黑龙江省卫生健康委员会  
主 办: 黑龙江省森工总医院  
哈尔滨医科大学附属第四医院  
协 办: 哈尔滨工业大学  
上海交通大学附属第一人民医院  
编 辑: 现代生物医学进展编辑委员会  
150040 哈尔滨市和兴路32号  
电 话: 0451-82583800  
E-mail: biomed\_54@126.com  
E-mail: liudui\_21@126.com  
E-mail: biomagnetism@163.com  
http://biomed.cnjournals.com  
http://www.shengwuyixue.com  
http://swx.periodicals.net.cn  
  
学 术 顾 问: 杨宝峰 刘颂豪  
阮长耿 曾溢滔 贺 林  
张亭栋 王迺谦 刘玉清  
郝希山 曾益新 张岂凡  
  
执行主编: 吴文忠  
主 编: 徐万海  
副 主 编: 李 钰 张贵祥  
黄文化 黄菊芳 刘 平  
吕传柱 曾乐平 唐一源  
曾凡一 刘 明 代文杰  
张清媛  
  
编辑部主任: 刘同奎  
编辑部副主任:  
刘子馨 谢建平 郑林丰  
  
编辑部地址: 150001, 哈尔滨市54号信箱  
(哈尔滨市花园街184号403)  
电 话: 0451-82583800 0451-53658268  
传 真: 0451-82583966  
出 版: 现代生物医学进展杂志社  
印 刷: 哈尔滨市工大节能印刷厂  
发 行: 国内: 哈尔滨市报刊发行局  
国 外: 中国国际图书贸易总公司  
(北京399信箱, 100044)  
国外发行代号: Q1728  
订 购: 全国各地邮局  
邮发代号: 14-12  
邮 购: 现代生物医学进展编辑部  
(150001 哈尔滨市54号信箱)  
定 价: 30.00元 / 期, 全年 720.00元  
中国标准刊号: ISSN 1673-6273  
CN 23-1544/R  
  
2022年版权归现代生物医学进展杂志社所有  
本刊刊出的所有文章不代表编委会的观点,  
除非特别声明 本刊如有印刷质量问题, 请向  
现代生物医学进展杂志编辑部调换

## 目 次

### ·论 著·

### ·基础研究·

- 两种基因编码的探针特异性检测小鼠脑5-HT信号的比较 ..... 张 坤 王建刚 王静怡等 (2601)  
游离线粒体拷贝数检测方法建立及应用 ..... 王决恒 周宇荀 李 凯等 (2607)  
房颤大鼠模型心室重构与心肌细胞钙稳态和心律失常的关联 ..... 文 亮 项 羽 刘小祥等 (2616)  
糖尿病病理性神经痛大鼠坐骨神经中miR-133a的上调对疼痛阈值的影响及机制 ..... 邵 英 李 洁 刘晓宇等 (2620)  
脂肪细胞衰老通过衰老相关分泌表型诱导微血管内皮细胞早衰和功能紊乱 ..... 邵千慧 张 静 米白冰等 (2625)  
卵巢癌细胞中MTDH-PTEN互作对奥沙利铂耐药性的影响及机制 ..... 李 珍 郭春霞 王 佳等 (2631)  
罗氟司特对脓毒症炎症大鼠炎症因子及淋巴细胞的调控机制分析 ..... 生 婷 杨 娜 谢 谦等 (2636)  
川陈皮素对脑梗死缺血再灌注大鼠的保护作用及其机制研究 ..... 王 敏 卢怀海 庞旭阳等 (2642)  
  
·临床研究·  
  
计算机认知矫正治疗技术在慢性精神分裂症患者认知功能缺陷治疗中的应用效果 ..... 庄 琼 白 丽 何 方等 (2648)  
血清免疫炎症相关蛋白复合物、25-羟维生素D、脂肪细胞因子与炎症性肠病患者疾病活动性和肠道菌群的相关性研究 ..... 杨 宏 张铭光 王治东等 (2653)

# 现代生物医学进展

XIANDAI SHENGWUYIXUE JINZHAN

半月刊 2001年4月创刊 第22卷 第14期 2022年7月30日出版 Progress in Modern Biomedicine

- 肠内营养对活动期溃疡性结肠炎伴营养不良患者营养状况、肠黏膜屏障功能和肠道菌群的影响 ..... 袁伟 李娟 杨小娟等 (2658)
- 重症肺炎患儿俯卧位与仰卧位机械通气的临床效果比较及其脱机结局的影响因素分析 ..... 杨雪 陈莹 卢淑亚等 (2663)
- 胸腹腔镜联合食管癌切除术对食管癌患者肺功能、免疫功能的影响及颈部吻合口瘘的影响因素探讨 ..... 王海 杨更朴 柴立勋等 (2668)
- 早期颈内动脉支架置入对动脉粥样硬化脑梗患者血清 Lp-PLA2 和 Hcy 水平的影响 ..... 刘福德 王建懿 陈晨等 (2673)
- PD-1/PD-L1 抑制剂对肺鳞状细胞癌患者调节性 T 细胞及其亚型的影响 ..... 李廷慧 刘芳 任志鹏等 (2678)
- 视网膜病变早产儿视网膜厚度与血清血管新生细胞因子 PEDF 和 VEGF 表达的相关性 ..... 蒋晨 丁琳 万新娟等 (2682)
- 经尿道输尿管镜钬激光碎石术后尿路感染的影响因素及其对患者细胞免疫功能和生活质量的影响 ..... 孙家各 孙博 侯备等 (2686)
- 改良乳突根治术联合后上壁重建对上鼓室胆脂瘤型中耳炎患者听力改善及复发率的影响 ..... 李成军 陈福权 王宝岗等 (2691)
- 心脉通胶囊联合非诺贝特对饮食控制疗法效果不佳的高脂血症患者血脂、血液流变学和血管内皮功能的影响 ..... 王琛 郭姗姗 宋云龙等 (2695)
- 脊髓外科手术后精神障碍患者发病影响因素及抑制性神经递质水平、神经营养因子表达变化情况分析 ..... 乌拉别克·毛力提 哈丽娜·哈力克 杜伟等 (2700)
- 矮小症儿童健康相关生活质量与家庭功能和社会适应能力的相关性分析 ..... 袁会娟 张业平 黄燕等 (2705)
- 主动保温与常规保温对食管癌根治术患者术中体温、应激反应和术后苏醒质量的影响 ..... 李泓金 哲殷磊等 (2709)
- 多发性骨髓瘤患者骨髓单个核细胞 Treg、Th17 和血清 IL-6、IL-10 与临床分期以及治疗效果的关系分析 ..... 张丽红 王宣 尹婉宜等 (2713)
- 吻合皮下静脉的带蒂皮瓣修复四肢皮肤软组织缺损的效果分析 ..... 杨光 帖成章 胡沣等 (2718)
- 清咽滴丸药物冰块治疗甲状腺术后咽痛的疗效及对临床症状和睡眠质量的影响 ..... 周榆腾 龙燕 刘大晟等 (2722)
- 冠心病合并糖尿病患者外周血巨噬细胞中脂质稳态与动脉粥样硬化指数的关联研究 ..... 马晓敏 乔彩霞 赵娜等 (2727)
- 无充气腋窝入路腔镜下单侧甲状腺癌根治术与开放性手术的疗效比较及对免疫功能和颈部功能的影响 ..... 赵万胜 冯其柱 孙智强等 (2732)

# 现代生物医学进展

## XIANDAI SHENGWUYIXUE JINZHAN

半月刊 2001年4月创刊 第22卷 第14期 2022年7月30日出版 Progress in Modern Biomedicine

- 血清 TAP、PDCD-5、TNF- $\alpha$  与晚期非小细胞肺癌患者抗 PD-1 治疗疗效的关系分析 ..... 杨冬 辛勇 陈辰等 (2737)
- 血清 MUC1、SCD-1、NLRP3 在溃疡性结肠炎患者中的表达与凝血功能异常的相关性 ..... 哈丽娜·哈力克 李婷 代梦莹等 (2743)
- 舒血宁注射液联合倍他司汀对椎-基底动脉供血不足性眩晕症患者椎-基底动脉血流速度和氧化应激的影响 ..... 孙丽燕 李景莉 李亚楠等 (2748)
- 2型糖尿病合并代谢综合征患者血清 25(OH)D、 $\gamma$ -GGT、SUA/SCr 比值与肥胖体表测量指标、糖脂代谢和胰岛素抵抗的相关性 ..... 匡蕾 戴武 叶军等 (2753)
- 超声引导下髂腹股沟神经阻滞应用于男性全身麻醉后导尿管相关膀胱刺激征临床效果的回顾性研究 ..... 何敏琪 唐小曼 邓继财等 (2758)
- 磁共振成像联合血清前列腺特异抗原、上皮钙黏蛋白、早期前列腺癌抗原 -2 诊断前列腺癌的临床价值探讨 ..... 李坤 郑钧泽 李瑞东等 (2763)
- 诱导痰黏蛋白 5AC 对支气管哮喘和慢性阻塞性肺疾病的鉴别价值 ..... 李华 李琪 刘峰等 (2768)
- 速效牙痛宁酚辅助根管治疗对慢性牙髓炎患者口腔健康相关生活质量 ..... 王志杰 郑建英 赵晓佩等 (2773)
- 血清 HE4、VEGF、MCP-1 及 CCL20 与乳腺癌患者保乳术后局部复发的关系研究 ..... 罗洁 刘世伟 张蒲蓉等 (2778)
- Duchenne 型肌营养不良患儿的临床特征和基因突变分析 ..... 茹凉 沙帕古丽·艾则孜 王亚南等 (2784)
- 肺叶切除术与肺段切除术对直径≤ 2 cm 早期非小细胞肺癌患者肺通气功能指标及中远期预后的影响 ..... 邵长卿 崔育慧 李新等 (2791)
- 早发性卵巢功能不全患者血清 25-OH-VD、DBP、SIRT1 与性激素和氧化应激的关系研究 ..... 王娟 祁国星 宋化雨等 (2796)
- 重要信息·
- 《现代生物医学进展》杂志简介及投稿指南 ..... (IV)

责任编辑:王念、武海艳、郭晓东、李寿朋、王国华、陈文、田向荣、曾垂凯、陶维东、王沛坚、崔玉宝

英文编辑:田林杰、王娟、杨尚琴、李媛媛、吕志刚、马军、符波、朱杰、许愿忠、靳大川、岳颖、陈芸芸

执行编辑:谢建平、曾乐平、刘子馨、郑林丰、韩康、周利红、周颖、张玉环、董佩锋、朱英杰、万民熙

封面设计:曾乐平、彭安安

# Progress in Modern Biomedicine

Established in April 2001

Volume 22 Number 14

July 30 2022

**Responsible:** Health Commission of Heilongjiang province  
**Sponsor:** Heilongjiang Province Forestry General Hospital

The Fourth Hospital of Harbin Medical University

**Cosponsor:** Harbin Institute of Technology  
Shanghai Jiao Tong University  
Affiliated First People's Hospital

**Editing:** Editorial Board of Progress in Modern Biomedicine

No.32, Hexing Road, Harbin 150040

Tel:(0451) 82583800

<http://biomed.cnjournals.com>

<http://www.shengwuyixue.com>

<http://swcx.periodicals.net.cn>

E-mail: biomed\_54@126.com

E-mail: liudhui\_21@126.com

E-mail: biomagnetism@163.com

Academic Adviser: YANG Bao-feng

LIU Song-hao RUAN Chang-geng

ZENG Yi-tao HE Lin

ZHANG Ting-dong WANG Nai-qian

LIU Yu-qing HAO Xi-shan

ZENG Yi-xin ZHANG Qi-fan

**Executive-Editor-in-chief:**

WU Wen-zhong

**Editor-in-chief:**

XU Wan-hai

**Associate Editor-in-chief:** LI Yu

ZHANG Gui-xiang HUANG Wen-hua

HUANG Ju-fang LIU Ping

LV huan-zhu ZENG Le-ping

TANG Yi-yuan ZENG Fan-ji

LIU Ming DAI Wen-jie

ZHANG Qing-yuan

**Managing Director:**

LIU Tong-kui

**Managing Associate Director:**

LIU Zi-xin XIE Jian-ping

ZHENG Lin-feng

**Address of Editorial Department:**

150001, Harbin No.54 Post-office box  
(Room 403, No.184 at Huayuan Street, Harbin)

Tel: 0451-82583800 0451-53658268

**Publishing:** House, Journal of Progress in Modern Biomedicine

**Printing:** Harbin city Gongda save energy printing House

**Overseas Distributor:** China International Book Trading corporation.

P.O Box 399, Beijing, code No.Q1728

**Mail-Order:** Editorial Department of publishing House, Progress in Modern Biomedicine

Harbin 54 Post-office box, Harbin 150001

Tel: 0451-53658268 0451-82583800

**CSSN:** ISSN 1673-6273  
CN 23-1544/R

**Copyright 2022 by the publishing**

**House of Progress in Modern Biomedicine**

All articles published represent the opinions of the authors, do not reflect the official policy of the Editorial Board of Progress in Modern Biomedicine unless this is clearly specified.

## Contents in Brief

### ORIGINAL ARTICLES

#### ·BASIC RESEARCH·

##### Comparison of Two Genetically Encoded Fluorescent Sensors to Detect 5-HT in Mouse Brain

ZHANG Kun, WANG Jian-gang, WANG Jing-yi, et al

(2601)

##### Establishment and Application of Detection Method for Cell Free Mitochondrial Copy Number

WANG Jue-heng, ZHOU Yu-xun, LI Kai, et al

(2607)

##### Association of Ventricular Remodeling, Calcium Homeostasis and Arrhythmia in Atrial Fibrillation Rat Model

WEN Liang, XIANG Yu, LIU Xiao-xiang, et al

(2616)

##### The Effect of up-regulation of miR-133a in the Sciatic Nerve of Rats with Diabetic Pathological Neuralgia on

Pain Threshold and Its Mechanism

SHAO Ying, LI Jie, LIU Xiao-yu, et al

(2620)

##### Adipocyte Senescence Induces Microvascular Endothelial Progeria

and Functional Disorder Through Senescence Associated

Secretory Phenotype

TAI Qian-hui, ZHANG Jing, MI Bai-bing, et al

(2625)

##### The Effect and Mechanism of MTDH-PTEN Interaction

on Oxaliplatin Resistance in Ovarian Cancer Cells

LI Zhen, GUO Chun-xia, WANG Jia, et al

(2631)

# Progress in Modern Biomedicine

Established in April 2001

Volume 22 Number 14

July 30 2022

## Regulatory Mechanism of Roflumilast on Inflammatory Factors

### and Lymphocytes in Septic Inflammatory Rats

SHENG Di, YANG Na, XIE Qian, et al ..... (2636)

## Protective Effect of Tangerine on Rats with Cerebral Infarction and Its Mechanism

WANG Min, LU Huai-hai, PANG Xu-yang, et al ..... (2642)

## ·CLINICAL RESEARCH·

### Application Effect of Computerized Cognitive Remediation

#### Therapy in the Treatment of Cognitive Impairment

#### in Patients with Chronic Schizophrenia

ZHUANG Qiong, BAI Li, HE Fang, et al ..... (2648)

### Correlation Study of Serum Immune Inflammation Related Protein Complexes,

#### 25-Hydroxyvitamin D, Chemerin With Disease Activity

#### and Intestinal Flora in Patients with Inflammatory Bowel Disease

YANG Hong, ZHANG Ming-guang, WANG Zhi-dong, et al ..... (2653)

### Effects of Enteral Nutrition on Nutritional Status, Intestinal Mucosal Barrier Function

#### and Intestinal Flora in Patients with Active Ulcerative Colitis with Malnutrition

YUAN Wei, LI Juan, YANG Xiao-juan, et al ..... (2658)

### Comparison of Clinical Effect of Mechanical Ventilation in Prone Position

#### and Supine Position in Children with Severe Pneumonia

#### and Analysis of Influencing Factors of Offline Outcome

YANG Xue, CHEN Ying, LU Shu-ya, et al ..... (2663)

### Effects of Thoracoscopic and Laparoscopic Esophagectomy on Pulmonary Function

#### and Immune Function in Patients with Esophageal Cancer

#### and the Influencing Factors of Cervical Anastomotic Fistula

WANG Hai, YANG Geng-pu, CHAI Li-xun, et al ..... (2668)

### Effects of Early Internal Carotid Artery Stent Placement on Serum Lp-PLA2

#### and Hcy Levels in Patients with Atherosclerotic Cerebral Infarction

LIU Fu-de, WANG Jian-yi, CHEN Chen, et al ..... (2673)

# Progress in Modern Biomedicine

Established in April 2001

Volume 22 Number 14

July 30 2022

## Effects of PD-1/PD-L1 Inhibitor on Regulatory T Cells and Their Subtypes

### in Patients with Lung Squamous Cell Carcinoma

LI Ting-hui, LIU Fang, REN Zhi-peng, et al ..... (2678)

## Correlation between Retinal Thickness and the Expression of

### Serum Angiogenesis Cytokines PEDF and VEGF in Premature Infants with Retinopathy

JIANG Chen, DING Lin, WAN Xin-juan, et al ..... (2682)

## Influence Factors of Urinary Tract Infection after Transurethral Ureteroscopic

### Holmium Laser Lithotripsy and Their Effects on

### Cellular Immune Function and Quality of Life

SUN Jia-ge, SUN Bo, HOU Bei, et al ..... (2686)

## Effect of Modified Mastoidectomy Combined with Posterior Superior Wall Reconstruction on

### Hearing Improvement and Recurrence Rate in Patients

### with Upper Tympanic Cholesteatoma Otitis Media

LI Shu-jun, CHEN Fu-quan, WANG Bao-gang, et al ..... (2691)

## Effects of Xinmaitong Capsule Combined with Fenofibrate on Blood Lipid,

### Hemorheology and Vascular Endothelial Function in Hyperlipidemia Patients with

### Poor Effect of Diet Control Therapy

WANG Chen, GUO Shan-shan, SONG Yun-long, et al ..... (2695)

## Analysis of the Influencing Factors, Inhibitory Neurotransmitter Levels

### and Neurotrophic Factor Expression Changes in Patients with

### Mental Disorders after Spinal Cord Surgery

Wulabeike·Maoliti, Halina·Halike, DU Wei, et al ..... (2700)

## Correlation Analysis Between Health-Related Quality of Life, Family Function

### and Social Adaptability in Children with Dwarfism

YUAN Hui-juan, ZHANG Ye-ping, HUANG Yan, et al ..... (2705)

## Effects of Active Heat Preservation and Conventional Heat Preservation on Intraoperative Body

### Temperature, Stress Response and Postoperative Awakening Quality of

### Patients Undergoing Radical Esophagectomy

LI Hong, JIN Zhe, YIN Lei, et al ..... (2709)

# Progress in Modern Biomedicine

Established in April 2001

Volume 22 Number 14

July 30 2022

## Relationship between Bone Marrow Mononuclear Cell Treg, Th17, Serum IL-6 and IL-10

and Clinical Stage and Therapeutic Effect in Patients with Multiple Myeloma

ZHANG Li-hong, WANG Xuan, YIN Wan-yi, et al ..... (2713)

## Analysis of the Effects of Pedicled Skin Flap Anastomosed with Subcutaneous Vein

in Repairing Skin and Soft Tissue Defects of Extremities

YANG Guang, TIE Cheng-zhang, HU Feng, et al ..... (2718)

## Efficacy of Qingyan Dropping Pill and Drug Ice in the Treatment of Pharyngeal Pain

after Thyroid Surgery and Its Effect on Clinical Symptoms and Sleep Quality

ZHOU Yu-teng, LONG Yan, LIU Da-sheng, et al ..... (2722)

## Relationship between Lipid Homeostasis in Peripheral Blood Macrophages

and Atherosclerosis Index in Patients with Coronary Heart Disease

Complicated with Diabetes Mellitus

MA Xiao-min, QIAO Cai-xia, ZHAO Na, et al ..... (2727)

## Comparison of Curative Effect Between Endoscopic Radical Thyroidectomy

and Open Surgery Through Non Inflatable Axillary Approach

and its Effect on Immune Function and Neck Function

ZHAO Wan-sheng, FENG Qi-zhu, SUN Zhi-qiang, et al ..... (2732)

## Analysis of the Relationship Between Serum TAP, PDCD-5, TNF- $\alpha$

and Anti-PD-1 Therapy in Patients with Advanced Non-Small Cell Lung Cancer

YANG Dong, XIN Yong, CHEN Chen, et al ..... (2737)

## Correlation between the Expression of Serum MUC1, SCD-1 and NLRP3

in Patients with Ulcerative Colitis and Abnormal Coagulation Function

Halina·Halike, LI Ting, DAI Meng-ying, et al ..... (2743)

## Effects of Shuxuening Injection Combined with Betahistine on Vertebrobasilar Blood Flow Velocity

and Oxidative Stress in Patients with Vertebrobasilar Insufficiency Vertigo

SUN Li-yan, LI Jing-li, LI Ya-nan, et al ..... (2748)

## Correlation of Serum 25(OH)D, $\gamma$ -GGT, SUA/SCr Ratio with Body Surface Measurement of Obesity,

Glucose and Lipid Metabolism and Insulin Resistance in Patients with

Type 2 Diabetes Mellitus Complicated with Metabolic Syndrome

KUANG Lei, DAI Wu, YE Jun, et al ..... (2753)

# Progress in Modern Biomedicine

Established in April 2001

Volume 22 Number 14

July 30 2022

## Retrospective Study on the Clinical Effect of Ultrasound-Guided

### Ilio-Hypoabdominal/Ilio-Inguinal Nerve Block on Catheter-Related Bladder Discomfort after General Anesthesia in Male

HE Min-qi, TANG Xiao-man, DENG Ji-cai, et al ..... (2758)

## Discussion on Clinical Value of Magnetic Resonance Imaging

### Combined with Serum Prostate Specific Antigen, Epithelial Cadherin and Early Prostate Cancer Antigen 2 in Diagnosis of Prostate Cancer

LI Kun, ZHENG Jun-ze, LI Rui-dong, et al ..... (2763)

## Differential Value of Induced Sputum Mucoprotein 5AC in Bronchial Asthma

### and Chronic Obstructive Pulmonary Disease

LI Hua, LI Qi, LIU Feng, et al ..... (2768)

## Effects of Quick Acting Yatongning Tincture Assisted Root Canal Therapy

### on Oral Health-Related Quality of Life and Serum Toll Like Receptor 4 and CX3C Chemokine Ligand 1 in Patients with Chronic Pulpitis

WANG Zhi-jie, ZHENG Jian-ying, ZHAO Xiao-pei, et al ..... (2773)

## Relationship Study between Serum HE4, VEGF, MCP-1, CCL20

### and Local Recurrence after Breast Conserving Surgery in Breast Cancer Patients

LUO Jie, LIU Shi-wei, ZHANG Pu-rong, et al ..... (2778)

## Analysis of Gene Mutation and Clinical Features in Children with Duchenne Muscular Dystrophy

RU Liang, Shapaguli-Aizezi, WANG Ya-nan, et al ..... (2784)

## Effects of Lobectomy and Segmental Pneumonectomy on Pulmonary Ventilation Function

### and Medium and Long-Term Prognosis in Patients with Early Non-Small Cell Lung Cancer with Diameter $\leq 2$ cm

SHAO Chang-qing, CUI Yu-hui, LI Xin, et al ..... (2791)

## Study of Serum 25-OH-VD, DBP, SIRT1 in Relation to Sex Hormones

### and Oxidative Stress in Patients with Early-Onset Ovarian Insufficiency

WANG Juan, QI Guo-xing, SONG Hua-yu, et al ..... (2796)



# 中国科技核心期刊

(中国科技论文统计源期刊)

## 收录证书

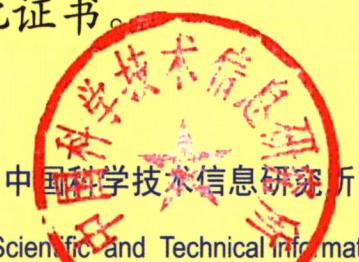
CERTIFICATE OF SOURCE JOURNAL

FOR CHINESE SCIENTIFIC AND TECHNICAL PAPERS AND CITATIONS

### 现代生物医学进展

经过多项学术指标综合评定及同行专家  
评议推荐，贵刊被收录为“中国科技核心期  
刊”（中国科技论文统计源期刊）。

特颁发此证书。



中国科学技术信息研究所

Institute of Scientific and Technical Information of China

北京复兴路 15 号 100038 [www.istic.ac.cn](http://www.istic.ac.cn)

2021年12月

证书编号：2020-F250-1706  
有效期至：2022年12月

万方数据

