

中文核心期刊(Core Journal of China) (北京大学出版社)

中国科技核心期刊(中国科技论文统计源期刊)

RCCSE中国核心学术期刊

中国知网CNKI, 中国科学引文数据库等收录源期刊

美国MEDLINE/Index Medicus(PubMed), EBSCO, 《CA》和荷兰ELSEVIER文献库收录源期刊

WHO西太平洋区医学索引(WPRIM)收录源期刊

第二届中国精品科技期刊, 2015年和2016年中国国际影响力优秀学术期刊



2137

23/R

# 中国实验血液学杂志

ZHONGGUO SHIYAN XUEYEXUE ZAZHI

2020年6月 第28卷 第3期

# JOURNAL OF EXPERIMENTAL HEMATOLOGY

**Volume 28**

**Number 3**

**June 2020**

ISSN 1009-2137



9 771009 213142

万方数据

中国病理生理学会  
CHINESE  
ASSOCIATION OF  
PATHOPHYSIOLOGY

## 目 次

## 论 著

## 白血病基础与临床

- 717 53 例伴有 11q23/*MLL* 重排的急性髓系白血病的常见基因突变  
白淑满, 公艳蕾, 张静人, 吴春晓, 张俊, 仇惠英, 沈红杰, 岑建农, 陈苏宁, 潘金兰
- 724 Navitoclax 联合柔红霉素促进红白血病细胞系 K562、HEL 和 TF-1 的凋亡  
段永娟, 刘超, 陈晓燕, 吴文齐, 郑佳睿, 张英驰, 竺晓凡
- 731 单倍体相合造血干细胞移植治疗中危 *NPM<sup>1</sup>/non-CEBPA<sup>dm</sup>/FLT3-ITD<sup>neg</sup>* 急性髓系白血病的疗效分析  
陈淳, 戚嘉乾, 楚甜甜, 王虹, 吴德沛, 阮长耿, 韩悦
- 737 西达本胺联合造血干细胞移植治疗儿童急性 T 淋巴细胞白血病的初步研究  
张亚伟, 黄科, 许吕宏, 韩黠蔚, 李欣瑜, 方建培
- 742 热带地区异基因造血干细胞移植治疗 12 例急性白血病的临床分析  
郑文帅, 管立勋, 程龙灿, 徐媛媛, 师凌昊, 孙鼎, 薄剑, 王全顺, 高晓宁
- 748 D-1、TIM-3、VISTA 在急性髓系白血病患者 T 细胞上的表达及意义  
葛梦君, 徐开林, 许婷, 唐亚男, 李振宇, 闫志凌, 孙海英, 程海, 朱锋, 桑威, 黄一虹, 邱婷婷, 李德鹏
- 753 双氢青蒿素通过激活氧化应激诱导人急性 T 淋巴细胞白血病细胞凋亡  
孙维栋, 余醒醒, 安依涵, 王鑫, 王莹, 童向民
- 758 *Bmi-1* 介导的 K562/ADR 细胞多药耐药机制  
赵宝霞, 刘思琪, 董思聪, 井如男, 孟秀香
- 767 急性淋巴细胞白血病儿童营养状况与医院感染相关性研究  
林嘉乐, 刘亢亢, 储金华, 黄玲玲, 谢志伟, 杨林海, 涂松济, 王宁玲
- 775 成人 AML 伴 *MLL* 重排患者临床特征及预后影响因素探讨  
王彤, 赵燕, 张青青, 许蓬蓉
- 781 信号传导通路基因突变对 CBF-AML 患者一个疗程诱导缓解率的影响及临床特征分析  
范丽芳, 许晶, 陈秀花, 田婷婷, 谢娟, 胡晋君, 郭志萍, 覃艳红, 徐智芳, 任方刚, 张耀方, 罗明, 任维肖, 王宏伟
- 789 miR-124-3p 靶向 *ABCA2* 增强慢性白血病细胞 K562-R 对伊马替尼的敏感性  
张凤娟, 曹伟杰, 常方方, 皇甫赞, 郭建新
- 797 121 例急性髓系白血病患者基因突变谱的分析  
王生梅, 郑红军, 田莹, 张建梅, 姚金华
- 802 MEIS1/miR-425 反馈调节通路对慢性髓系白血病细胞株 K562 增殖的作用  
赵旭宏, 杨桂花, 李丹丹
- 808 miR-181b 在慢性淋巴细胞白血病患者中的表达及其靶基因的预测  
寇珍, 刘虹, 王一淳, 黄琴, 王增胜, 古再丽努尔, 郎涛, 聂玉玲, 安利, 阿孜古丽, 木合塔拜尔, 张晓燕, 富玲, 艾何买江, 毛敏, 王晓敏, 李燕
- 815 miR-218 靶向 *Bmi-1* 抑制急性早幼粒细胞白血病细胞增殖的研究  
刘剑锋, 何攀, 潘德锋

- 821 急性淋巴细胞白血病患者 miR-146a 和 STAT1 表达水平与临床特征相关性分析  
谭文敏, 黄芬, 李国雄, 吴洁, 韩锋
- 828 小剂量 HAG 及地西他滨联合方案治疗老年 AML 患者疗效的研究  
潘鹏吉, 罗章琴
- 833 大剂量维生素 C 对急性髓系白血病细胞增殖、凋亡的影响  
林晓静, 邹兴立, 赵臻怡, 王静, 杨竹, 倪勤, 魏锦
- 842 多重 RT-PCR 在初发急性淋巴细胞白血病患者中检测不同融合基因的诊断价值  
梁晓萍, 孙静, 邵明明, 武永红, 李妮, 韩文霞, 王海东

### 淋巴瘤基础与临床

- 849 219 例原发胃肠道非霍奇金淋巴瘤患者的临床特征  
李越洋, 胡冬至, 王亚非, 赵智刚, 曹增, 张翼鹭, 张会来, 田晨
- 855 EZH2 在伴 HBV 感染的弥漫大 B 细胞淋巴瘤患者中的表达及其临床意义  
张永甜, 冯丹, 王莹, 李德鹏, 李振宇, 邱婷婷, 徐开林
- 861 抗核抗体与抗核抗体谱在淋巴瘤治疗中的应用  
王美娥, 范春梅
- 866 中性粒细胞 / 淋巴细胞比值在初诊血管免疫母细胞性 T 细胞淋巴瘤患者预后分析中的价值  
杨玉琼, 何合胜, 戴艳, 靳小可, 李佳嘉, 黄辰, 黄君, 齐晶, 严家炜, 黄东平
- 872 改良 LMB 89 ± 利妥昔单抗方案对伯基特淋巴瘤患者远期获益的影响  
谭琳, 谢瑜, 杨坚, 刘琳
- 876 Circ\_cgga162 在套细胞淋巴瘤患者中的表达及意义  
李焱, 贾振薇, 刘吉祥, 叶敬伟, 孔晓阳, 杨志峰, 刘晓燕, 罗建民

### 多发性骨髓瘤基础与临床

- 881 多发性骨髓瘤患者外周血 Tim-3 的表达变化及与 T、B 细胞功能异常的关系  
刘卉, 赵建强, 倪增峰, 刘宇宏, 焦娇
- 886 血清轻链在多发性骨髓瘤中的诊断及疗效评价中的价值  
喻焱, 滕小娟, 罗光丽, 吴立翔, 郭变琴

### 骨髓增生异常综合征

- 894 不同化疗方案治疗 MDS-RAEB/AML-MRC 临床对比研究  
吴希锋, 李弹弹, 孙玲, 王丽娟, 冉学红

### 贫血病与血小板、血栓疾病

- 899 蛋白激酶 A 活化对血小板聚集功能的影响  
江梦泉, 刘俊, 周康熙, 叶红磊, 胡仁萍, 闫荣, 阮长耿, 戴克胜
- 904 丹参多酚酸盐导致自身免疫性溶血性贫血的检测及输血效果评价  
马春娅, 罗圆圆, 杨璐, 封彦楠, 孙晓琳, 邹文娟, 汪德清, 于洋
- 909 miR-335-5p/ADCY3 诱导的再生障碍性贫血患者免疫异常的机制研究  
霍佳莉, 任翔, 李昆鑫, 张磊升, 郑以州
- 918 中国福建南平地区地中海贫血基因突变类型研究  
陈明发, 黄闽忠, 林泉, 黄佳, 陈芳, 张嘉莹, 薛飞
- 927 获得性再生障碍性贫血 SD 大鼠模型的建立  
王萍萍, 李佳妮, 宋新龙, 王爱迪, 刘宝山
- 932 基于高通量测序技术的重庆市渝中区育龄人群地中海贫血流行病学调查及基因分析  
秦茂, 顾华妍, 张海燕, 任钧, 彭茸, 朱欣
- 937 不同途径输注 PMSC 对再生障碍性贫血鼠造血调控因子水平的影响  
林传明, 刘礼平, 谢水玲, 赖文鸿, 许希, 胡彩东, 廖长风, 陈小芸, 李海亮

- 942 足月儿与早产儿脐血有核红细胞基因组 DNA 甲基化差异分析  
杨楠楠,罗振元,周曼,林虹,王薇,黄盛文
- 948 腺病毒介导的 B 结构域缺失的人凝血因子Ⅷ在 SD 大鼠 ADSC 中的表达  
朱益文,谢燕燕,王馨,李杰,王霖虹,闫振宇

## 输血医学

- 956 献血者 TP 抗体 ELISA 检测屏蔽界限的探讨  
胡京辉,葛红卫,王瑞,郭瑾,高楠,张婧,吴硕,贾俊杰,刘正敏,李玲,刘忠
- 961 患者不规则抗体鉴定结果分析及其临床意义  
侯瑞琴,杨洪燕,崔银平,郭淑丽,徐静,田文沁
- 967 贮存式自体血输注在普外科择期手术中的临床应用研究  
黄慧瑛,黄建云,魏亚明,钟明璐,汪传喜
- 972 输血不良反应相关因素分析  
唐聪海,黄燕雪,林艺璇,原敏

## 临床血液学

- 977 POEMS 综合征相关肾损害患者的临床及肾脏病理特征  
王卫敏,万鼎铭,刘林湘,郭荣,孙玲,邢国兰,曹伟杰
- 983 *FGFR1* 基因异常在血液肿瘤中的临床意义  
张春玲,唐古生,郭孟乔,程辉,刘明东,杨建民,龚胜蓝
- 989 血液病粒细胞缺乏症患者医院感染病原菌的分布及药敏分析  
张鹏鹏,王丽娜,李明,张豪,赵龙,张锦,王盼盼,席亚明

## G6PD 缺乏症

- 996 泸州儿童 G6PD 缺乏症的基因突变类型及临床特点分析  
蒋琦,邓正华,陈红英,杨洪,刘文君

## 免疫血液学

- 1001 胶原蛋白肽改善模拟失重小鼠外周血淋巴细胞分布及脾脏 T 淋巴细胞增殖能力  
司少艳,徐冰心,吴莹莹,秦亚亚,段然,宋淑军

## 噬血细胞综合征

- 1006 可溶性 B7-H3 在继发性噬血细胞性淋巴组织细胞增多症患者中的表达及临床意义  
吕鑫,王越,王菱菱,尹光丽,刘玲玲,段丽敏,田甜,许戟,仇红霞

## 造血干细胞移植

- 1012 异基因造血干细胞移植后供受者嵌合状态自动分析和监测平台的开发和应用  
房建成,王芳,袁丽莉,王绵绵,李婷婷,杨颐杭,刘杨,马小丽,陈雪,张阳,聂代静,陈佳琦,刘红星
- 1019 间充质干细胞和内皮祖细胞联合输注对造血干细胞移植后损伤肺的影响  
张婷,陈雨婷,拾金蕊,孙甜甜,鲁文怡,徐开林,曾令宇
- 1025 原发性免疫缺陷病造血干细胞移植患儿几种常见呼吸道病毒病原分析  
黄禹,陈智,孟岩,管贤敏,于洁,赵晓东,窦颖
- 1032 Mmu-circRNA\_016901 对骨髓间充质干细胞放射敏感性的影响  
张军华,文贤慧,黄蓉,陈赛,刘凤霞,桂嵘

## 综述

- 1038 造血干细胞体外扩增策略研究进展  
文瑞婷,张斌,陈虎
- 1044 造血干细胞的谱系分化——巨核细胞来源  
张森,董芳,刘子闲,依马秀夫

- 1049 脐血移植在血液系统疾病中的临床应用研究进展  
王利,张超,刘承军,高春记
- 1054 脾酪氨酸激酶抑制剂在血液肿瘤中作用的研究进展  
纪婷婷,陈秋妮,陶善东,于亮
- 1059 单细胞测序技术在恶性血液病诊疗中的应用  
王明镜,刘为易,胡晓梅
- 1064 中药单体逆转慢性髓系白血病多药耐药的研究进展  
孙颖,刘文君
- 1069 CAR-T 和 PD-1 单克隆抗体在急性髓系白血病治疗中的进展和趋势  
王季石

## 读者·作者·编者

- 1018 更正基金编号声明
- 扉 1 《中国实验血液学杂志》第八届编辑委员会
- 扉 1 《中国实验血液学杂志》全文和摘要电子版查阅和下载方法
- 扉 2 在 PubMed, MEDLINE 中搜索时,可用本刊国际刊号 1009 - 2137 作为《中国实验血液学杂志》刊名输入
- 扉 2 《中国实验血液学杂志》关于基因和蛋白名称拼写暂行规定
- 封二 《中国实验血液学杂志》投稿简则
- 封三 《中国实验血液学杂志》荣获多家权威机构公布的“核心期刊”称号和文献数据库收录

# JOURNAL OF EXPERIMENTAL HEMATOLOGY

(Established in April, 1993)

Bimonthly Volume 28 Number 3

June, 2020

## Contents

### ORIGINAL ARTICLES

#### *Leukemia Basis and Clinic*

- 717 **Clinical Significance of Common Gene Mutations in 53 Patients with Acute Myeloid Leukemia Harboring 11q23/MLL Rearrangements**  
BAI Shu-Xiao, GONG Yan-Lei, ZHANG Jing-Ren, WU Chun-Xiao, ZHANG Jun, QIU Hui-Ying, SHEN Hong-Jie, CEN Jian-Nong, CHEN Su-Ning, PAN Jin-Lan
- 724 **Navitoclax Combined with Daunorubicin Promotes Apoptosis of Erythroleukemia Cell Lines K562, HEL and TF-1**  
DUAN Yong-Juan, LIU Chao, CHEN Xiao-Yan, WU Wen-Qi, ZHENG Jia-Rui, ZHANG Ying-Chi, ZHU Xiao-Fan
- 731 **Efficacy of Haploidentical Hematopoietic Stem Cell Transplantation in Treatment of Intermediate Risk Acute Myeloid Leukemia with Negative for FLT3-ITD, NPM1 or Biallelic CEBPA Mutation**  
CHEN Chun, QI Jia-Qian, CHU Tian-Tian, WANG Hong, WU De-Pei, RUAN Chang-Geng, HAN Yue
- 737 **Preliminary Study of Chidamide Combined with Hematopoietic Stem Cell Transplantation in the Treatment of Childhood Acute T-Lymphoblastic Leukemia**  
ZHANG Ya-Ting, HUANG Ke, XU Li-Hong, HAN Xia-Wei, LI Xin-Yu, FANG Jian-Pei
- 742 **Clinical Analysis of Allogeneic Hematopoietic Stem Cell Transplantation for Treatment of 12 Patients with Acute Leukemia in Tropical Area**  
ZHENG Wen-Shuai, GUAN Li-Xun, CHENG Long-Can, XU Yuan-Yuan, SHI Ling-Hao, SUN Ding, BO Jun, WANG Quan-Shun, GAO Xiao-Ning
- 748 **Expression and Significance of PD-1, TIM-3 and VISTA on T Cell of Acute Myeloid Leukemia Patients**  
GE Meng-Jun, XU Kai-Lin, XU Ting, TANG Ya-Nan, LI Zhen-Yu, YAN Zhi-Ling, SUN Hai-Ying, CHENG Hai, ZHU Feng, SANG Wei, HUANG Yi-Hong, QIU Ting-Ting, LI De-Peng
- 753 **Dihydroartemisinin Induces Apoptosis of Human Acute T Lymphocytic Leukemia Cells by Activating Oxidative Stress**  
SUN Wei-Dong, YU Xing-Xing, AN Yi-Han, WANG Xin, WANG Ying, TONG Xiang-Min
- 758 **Effect of Bmi-1 on Multidrug Resistance in K562/ADR Cells and Its Mechanisms**  
ZHAO Bao-Xia, LIU Si-Qi, DONG Si-Cong, JING Ru-Nan, MENG Xiu-Xiang
- 767 **Relationship between Nutritional Status and Nosocomial Infection in Children with Acute Lymphoblastic Leukemia**  
LIN Jia-Le, LIU Kang-Kang, CHU Jin-Hua, HUANG Ling-Ling, XIE Zhi-Wei, YANG Lin-Hai, TU Song-Ji, WANG Ning-Ling
- 775 **Clinical Characteristics and Prognostic Influencing Factors of Adult AML Patients with MLL Rearrangement**  
WANG Tong, ZHAO Yan, ZHANG Qing-Qing, XU Lian-Rong
- 781 **Effect of Signal Transduction Pathway Gene Mutations on the One- course Induced Remission Rate and Analysis of Clinical Characteristics in Patients with CBF-AML**  
FAN Li-Fang, XU Jing, CHEN Xiu-Hua, TIAN Ting-Ting, XIE Juan, HU Jin-Jun, GUO Zhi-Ping, TAN Yan-Hong, XU Zhi-Fang, REN Fang-Gang, ZHANG Yao-Fang, LUO Ming, REN Wei-Xiao, WANG Hong-Wei
- 789 **miR-124-3p Enhances the Sensitivity of Chronic Myelogenous Leukemia Cell K562-R to Imatinib by Targeting ABCA2**  
ZHANG Feng-Juan, CAO Wei-Jie, CHANG Fang-Fang, HUANG Fu-Yun, GUO Jian-Xin
- 797 **Analysis of Genomic Landscape in Patients with Acute Myeloid Leukemia**  
WANG Sheng-Mei, ZHENG Hong-Jun, TIAN Ying, ZHANG Jian-Mei, YAO Jin-Hua

- 802 **Function of MEIS1 and miR-425 to the Regulating of Chronic Myeloid Leukemia Cell Proliferation**  
ZHAO Xu-Hong, YANG Gui-Hua, LI Dan-Dan
- 808 **Expression Level and Target Gene Prediction of miR-181b in Patients with Chronic Lymphocytic Leukemia**  
KOU Zhen, LIU Hong, WANG Yi-Chun, HUANG Qin, WANG Zeng-Sheng, GU Zai-Li Nu Er, LANG Tao, NIE Yu-Ling, AN Li, A Zi-Gu Li, MU He-Ta Bai Er, ZHANG Xiao-Yan, FU Ling, AI He-Mai Jiang, MAO Min, WANG Xiao-Min, LI Yan
- 815 **MiR-218 Targeting Bmi-1 Inhibits Proliferation of Acute Promyelocytic Leukemia Cells**  
LIU Jian-Feng, HE-Pan, PAN De-Feng
- 821 **Relationships Between Expression level of MicroRNA-146a, STAT1 Protein and Clinical Characteristics in Children with Acute Lymphoblastic Leukemia**  
TAN Wen-Min, HUANG-Fen, LI Guo-xiong, WU Jie, HAN Feng
- 828 **Efficacy of Small Dose HAG Regimen Combined with Decitabine in Treatment of Elderly Patients with Acute Myeloid Leukemia**  
PAN Peng-Ji, LUO Zhang-Qin
- 833 **Effect of High Dose Vitamin C on Proliferation and Apoptosis of Acute Myeloid Leukemia Cells**  
LIN Xiao-Jing, ZOU Xing-Li, ZHAO Zhen-Yi, WANG Jing, YANG Zhu, NI Xun, WEI Jin
- 842 **Diagnostic Value of Multiplex RT-PCR for Detecting Different Fusion Genes in Children with Primary Acute Lymphoblastic Leukemia**  
LIANG Xiao-Ping, SUN Jing, SHAO Ming-Ming, WU Yong-Hong, LI Ni, HAN Wen-Xia, WANG Hai-Dong

### ***Lymphoma Basis and Clinic***

- 849 **Clinical Characteristics of 219 Patients with Primary Gastrointestinal Non-Hodgkin's Lymphoma**  
LI Yue-Yang, HU Dong-Zhi, WANG Ya-Fei, ZHAO Zhi-Gang, CAO Zeng, ZHANG Yi-Zhuo, ZHANG Hui-Lai, TIAN Chen
- 855 **Expression and Clinical Significance of EZH2 in Patients with Diffuse Large B Cell Lymphoma Accompanied by HBV Infection**  
ZHANG Yong-Tian, FENG Dan, WANG Ying, LI De-Peng, LI Zhen-Yu, QIU Ting-Ting, XU Kai-Lin
- 861 **Application of Antinuclear Antibody and Antinuclear Antibody Spectrum in Lymphoma Treatment**  
WANG Mei-E, FAN Chun-Mei
- 866 **Neutrophil-Lymphocyte Ratio as a Prognostic Predictor in Patients with Newly Diagnosed Angioimmunoblastic T Cell Lymphoma**  
YANG Yu-Qiong, HE He-Sheng, DAI Yan, JIN Xiao-Ke, LI Jia-Jia, HUANG Chen, HUANG Jun, QI Jing, YAN Jia-Wei, HUANG Dong-Ping
- 872 **Effect of Modified LMB 89 ± Rituximab Regimen on Long-Term Benefits for Patients's with Burkitt Lymphoma**  
TAN Lin, XIE Yu, YANG Jian, LIU Lin
- 876 **Relationship of Expression of Circ\_cgga162 with the Prognosis of Patients with Mantle Cell Lymphoma**  
LI Yan, JIA Zhen-Wei, LIU Ji-Xiang, YE Jing-Wei, KONG Xiao-Yang, YANG Zhi-Feng, LIU Xiao-Yan, LUO Jian-Min

### ***Multiple Myeloma Basis and Clinic***

- 881 **Correlation of the Expression Alteration of Tim-3 with the T Cell and B Cell Dysfunction in Peripheral Blood of Multiple Myeloma Patients**  
LIU Hui, ZHAO Jian-Qiang, NI Zeng-Feng, LIU Yu-Hong, JIAO Jiao
- 886 **Value of Serum Light Chain in Diagnosis and Evaluation of Efficacy for Multiple Myeloma**  
YU Yao, TENG Xiao-Juan, LUO Guang-Li, WU Li-Xiang, GUO Bian-Qin

### ***Myelodysplastic Syndrome***

- 894 **Clinical Comparison of Two Kinds of Chemotherapy Regimens in the Treatment of Patients with MDS-RAEB/AML-MRC**  
WU Xi-Feng, LI Tan-Tan, SUN Ling, WANG Li-Juan, RAN Xue-Hong

### ***Anemia, Platelet Disease and Thrombosis***

- 899 **Effect of Protein Kinase A Activation on Aggregation Function of Platelets**  
JIANG Meng-Xiao, LIU Jun, ZHOU Kang-Xi, YE Hong-Lei, HU Ren-Ping, YAN Rong, RUAN Chang-Geng, DAI Ke-Sheng

- 904 **Detection of Autoimmune Hemolytic Anemia Induced by Salvianolate and Evaluation of Blood Transfusion Efficacy**  
MA Chun-Ya, LUO Yuan-Yuan, YANG Lu, FENG Yan-Nan, SUN Xiao-Lin, ZOU Wen-Juan, WANG De-Qing, YU Yang
- 909 **MiR-335-5p-Mediated Dysfunction of T Lymphocytes in Patients with Acquired Aplastic Anemia**  
HUO Jia-Li, REN Xiang, LI Kun-Xin, ZHANG Lei-Sheng, ZHENG Yi-Zhou
- 918 **Analysis of the Types of Thalassemia Gene Mutations in Nanping Area of Fujian, China**  
CHEN Ming-Fa, HUANG Min-Zhong, LIN Quan, HUANG Jia, CHEN Fang, ZHANG Jia-Ying, XUE Fei
- 927 **Establishment of Acquired Aplastic Anemia SD Rat Model**  
WANG Ping-Ping, LI Jia-Ni, SONG Xin-Long, WANG Ai-Di, LIU Bao-Shan
- 932 **Prevalence and Genotypes Analysis of Thalassemia Among People of Reproductive Age in Yuzhong District of Chongqing Based on Next-Generation Sequencing**  
QIN Mao, GU Hua-Yan, ZHANG Hai-Yan, REN Jun, PENG Rong, ZHU Xin
- 937 **Effects of Different Routes in PMSC Transfusion on the Levels of Hematopoietic Regulatory Factors in Aplastic Anemia Rats**  
LIN Chuan-Ming, LIU Li-Ping, XIE Shui-Ling, LAI Wen-Hong, XU Xi, HU Cai-Dong, LIAO Chang-Feng, CHEN Xiao-Yu, LI Hai-Liang
- 942 **Analysis of Genome-Wide DNA Methylation Differences in Umbilical Cord Blood Nucleated Red Blood Cells Between Term and Preterm Infants**  
YANG Nan-Nan, LUO Zhen-Yuan, ZHOU Man, LIN Hong, WANG Wei, HUANG Sheng-Wen
- 948 **Adenovirus-mediated Expression of B-domain-Deleted Human Coagulation Factor VIII in ADSC of SD Rats**  
ZHU Yi-Wen, XIE Yan-Yan, WANG Xin, LI Jie, WANG Lin-Hong, YAN Zhen-Yu

### *Transfusion Medicine*

- 956 **Establishing the Blood Donor Deferral Criterion in TP ELISA Test**  
HU Jing-Hui, GE Hong-Wei, WANG Rui, GUO Jin, GAO Nan, ZHANG Jing, WU Shuo, JIA Jun-Jie, LIU Zheng-Min, LI Ling, LIU Zhong
- 961 **Analysis of the Irregular Antibodies of the Patients and Its Clinical Significance**  
HOU Rui-Qin, YANG Hong-Yan, CUI Yin-Ping, GUO Shu-Li, XU Jing, TIAN Wen-Qin
- 967 **Clinical Application of Preoperative Autologous Blood Donation in Selective General Surgery**  
HUANG Hui-Ying, HUNAG Jian-Yun, WEI Ya-Ming, ZHONG Ming-Lu, WANG Chuan-Xi
- 972 **Analysis of Related Factors of Adverse Transfusion Reactions**  
TANG Cong-Hai, HUANG Yan-Xue, LIN Yi-Xuan, YUAN Min

### *Clinical Hematology*

- 977 **Clinical and Pathological Characteristics of Related-Renal Damage in Patients with POEMS Syndrome**  
WANG Wei-Min, WAN Ding-Ming, LIU Lin-Xiang, GUO Rong, SUN Ling, XING Guo-Lan, CAO Wei-Jie
- 983 **Clinical Significance of FGFR1 Gene Abnormalities in Blood Tumors**  
ZHANG Chun-Ling, TANG Gu-Sheng, GUO Meng-Qiao, CHENG Hui, LIU Ming-Dong, YANG Jian-Min, GONG Sheng-Lan
- 989 **Distribution and Drug Sensitivity of Pathogens Causing Nosocomial Infection in Patients with Hematological Granulocytosis**  
ZHANG Peng-Peng, WANG Li-Na, LI Ming, ZHANG Hao, ZHAO Long, ZHANG Jin, WANG Pan-Pan, XI Ya-Ming

### *G6PD Deficiency*

- 996 **Gene Mutants and Their Clinical Characteristics of G6PD Deficiency Among Children in Luzhou Area**  
JIANG Qi, DENG Zheng-Hua, CHEN Hong-Ying, YANG Hong, LIU Wen-Jun

### *Immunohematology*

- 1001 **Collagen Peptides Improve Lymphocyte Distribution in Peripheral Blood and T Lymphocyte Proliferation in Spleen of Mice under the Condition of Simulated Weightlessness**  
SI Shao-Yan, XU Bing-Xin, WU Ying-Ying, QIN Ya-Ya, DUAN Ran, SONG Shu-Jun

## ***Hemophagocytic Syndrome***

- 1006 **Expression and Clinical Significance of Soluble B7-H3 in Patient with Secondary Hemophagocytic Lymphohistiocytosis**  
 LYU Xin, WANG Yue, WANG Ling-Ling, YIN Guang-Li, LIU Ling-Ling, DUAN Li-Min, TIAN Tian, XU Ji, QIU Hong-Xia

## ***Hematopoietic Stem Cell Transplantation***

- 1012 **Development and Application of Automatic Analysis and Surveillance Platform for Chimerism in Donors and Recipients after Allo-HSCT**  
 FANG Jian-Cheng, WANG Fang, YUAN Li-Li, WANG Mian-Mian, LI Ting-Ting, YANG Yi-Hang, LIU Yang, MA Xiao-Li, CHEN Xue, ZHANG Yang, NIE Dai-Jing, CHEN Jia-Qi, LIU Hong-Xing
- 1019 **Effects of Combined Infusion of Mesenchymal Stem Cells and Endothelial Progenitor Cells on Lung Injury after Hematopoietic Stem Cell Transplantation**  
 ZHANG Ting, CHEN Yu-Ting, SHI Jin-Rui, SUN Tian-Tian, LU Wen-Yi, XU Kai-Lin, ZENG Ling-Yu
- 1025 **Several Common Respiratory Viral Pathogens in Hematopoietic Stem Cell Transplantation Patients with Primary Immunodeficiency Disease**  
 HUANG Yu, CHEN Zhi, MENG Yan, GUAN Xian-Min, YU Jie, ZHAO Xiao-Dong, DOU Ying
- 1032 **Effect of Mmu-circRNA\_016901 on the Radiosensitivity of Bone Marrow Mesenchymal Stem Cells**  
 ZHANG Jun-Hua, WEN Xian-Hui, HUANG Rong, CHEN Sai, LIU Feng-Xia, GUI Rong

## **REVIEWS**

- 1038 **Research Advances on Ex Vivo Expansion Strategy of Hematopoietic Stem Cells——Review**  
 WEN Rui-Ting, ZHANG Bin, CHEN Hu
- 1044 **Hematopoietic Stem Cells Differentiate into the Megakaryocyte Lineage——Review**  
 ZHANG Sen, DONG Fang, LIU Zi-Xian, EMA Hideo
- 1049 **Research Advances on Clinical Application of Umbilical Cord Blood Transplantation in the Treatment of Hematological Diseases——Review**  
 WANG Li, ZHANG Chao, LIU Cheng-Jun, GAO Chun-Ji
- 1054 **Research Advance on the Role of Spleen Tyrosine Kinase Inhibitors in Hematologic Malignancies**  
 JI Ting-Ting, CHEN Qiu-Ni, TAO Shan-Dong, YU Liang
- 1059 **Application of Single Cell Sequencing in Diagnosis and Treatment of Malignant Hematological Diseases——Review**  
 WANG Ming-Jing, LIU Wei-Yi, HU Xiao-Mei
- 1064 **Research Advance on Reversing Multidrug Resistance of Chronic Myeloid Leukemia by Chinese Herbal Monomer——Review**  
 SUN Ying, LIU Wen-Jun
- 1069 **Progress and Trend of CAR-T and PD-1 Blockade in the Treatment of Acute Myeloid Leukemia——Review**  
 WANG Ji-Shi

本广告仅供医学药学专业人士阅读!

国药准字H20170010 (5mg)  
国药准字H20170011 (10mg)  
国药准字H20170009 (25mg)



**立生®**  
Lenalidomide Capsule  
5mg 10mg 25mg

# 来那度胺胶囊

## 国家新药，发明专利

【发明名称：3-(取代-2-氧异吲哚酮-2-基)-2,6-吡啶二酮的合成方法及中间体】

【专利号：ZL 2011 1 0005625.3】

### 适用于

- 本品与地塞米松合用，治疗曾接受过至少一种疗法的多发性骨髓瘤的成年患者

### 禁忌：

- 孕妇。
- 未达到所有避孕要求的可能怀孕的女性。
- 对本品活性成分或其中任何辅料过敏者。

**最常见的不良反应：**疲乏，中性粒细胞减少，便秘，腹泻，肌肉痉挛，贫血，血小板减少和皮疹。



**北京双鹭药业股份有限公司**  
BEIJING SL PHARMACEUTICAL CO.,LTD.

股票代码：002038

京药广审（文）第2019090554号

厂址：北京市昌平区科技园区利祥路2号

邮编：102200 传真：010-60730863

电话：010-60730801

营销总部：北京市海淀区阜石路69号碧桐园1号楼

邮编：100143 传真：010-88795883

电话：010-88627765 010-88799370