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# 铁死亡检测试剂盒

北京普利莱基因技术有限公司
BEIJING APPLYGEN GENE TECHNOLOGY CO., LTD

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BEI JING APPLYGEN TECHNOLOGIES CO., LTD.
地址：北京市昌平区振兴路36号院2号楼330
电话：010-62053186　网址：www.applygen.com

# COMPANY PROFILE

## 公司简介

北京普利莱基因技术有限公司于2004年成立，由留美归国人员创建，先后获得北京市高新技术企业、国家高新技术企业称号和证书，致力于研发生产具有自主知识产权、用于生物医学实验研究的各种工具试剂。

经过二十多年的积累和技术攻关，相继推出具有数百种自主知识产权的科研试剂，产品范围涵盖蛋白质组学、细胞生物学、分子生物学、生物化学、免疫学和实验医学等各类研究领域。建立了基因检测、蛋白印迹、免疫组化、基因克隆与表达、抗体制备和各类生化指标检测服务平台，已成为中国科研工作者信赖的、对生命科学研究起到推动作用的高端国产试剂生物技术公司。

## 发表文章

累计超过10万篇SCI论文引用！




铁死亡是细胞内游离铁离子积累引起细胞氧化损伤而诱导的一种调节性细胞死亡方式，在炎症、氧化应激和脂质氧化损伤过程中发挥重要作用，参与多种疾病发病机制包括阿尔茨海默病（AD）、中风和缺血再灌注损伤等。

作为科研热点，铁死亡检测指标包括细胞活性、脂质过氧化物、铁离子、活性氧、线粒体、谷胱甘肽代谢及铁死亡相关基因和蛋白表达。根据铁死亡发生机制和主要特征，普利莱提供相应指标检测试剂盒，供科研人员选择。

## 铁离子含量检测

细胞的铁离子特别是亚铁离子（$Fe^{2+}$）积累是铁死亡的典型标志，可以通过比色法来检测。普利莱提供亚铁离子/总铁离子含量检测试剂盒。

### 亚铁离子含量检测试剂盒

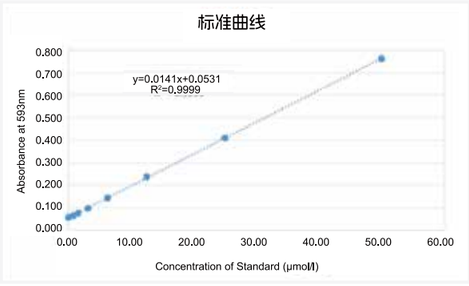
| 货号 | 产品名称 | 规格 |
|---|---|---|
| E1045 | 液体样本亚铁离子含量检测试剂盒 | 100 次　300 次 |
| E1046 | 组织细胞亚铁离子含量检测试剂盒 | 100 次　300 次 |

试剂盒采用 Fenere-S 法可检测各类组织、细胞、血清、血浆、细胞培养液中的亚铁离子含量。

**产品特点**

- 采用生化方法，使用常规酶标仪即可（检测波长 593nm）
- 操作步骤简化，1h 之内可以完成
- 组织细胞样本提供相应裂解液和方案
- 可检测低至 0.5uM 样本，检测下限更低
- 可检测浓度变化低至 0.08uM 的样本，灵敏度高

试剂盒标准曲线





# 总铁离子含量检测试剂盒

| 货号 | 产品名称 | 规格 |
|---|---|---|
| E1042-100 | 细胞内总铁离子含量比色法检测试剂盒 | 100 次 |
| E1042-300 | 细胞内总铁离子含量比色法检测试剂盒 | 300 次 |
| E1050-100 | 组织总铁离子含量比色法检测试剂盒 | 100 次 |
| E1050-300 | 组织总铁离子含量比色法检测试剂盒 | 300 次 |
| E1051-100 | 液体样本总铁离子含量比色法检测试剂盒 | 100 次 |
| E1051-300 | 液体样本总铁离子含量比色法检测试剂盒 | 300 次 |

试剂盒采用亚铁嗪比色法定量细胞、组织、血清和细胞培养液中的总铁离子，线性范围 5~300uM。原理如下：铁与蛋白结合成复合物，在酸性介质中铁从复合物中解离出来，再被还原剂还原成二价铁，并与亚铁嗪生成紫红色化合物，在 540-580nm 处比色测定。

$$Transferrin(Fe^{3+})_2 + e^- \xrightarrow{\text{还原剂}} 2\,Fe^{2+} + Transferrin$$

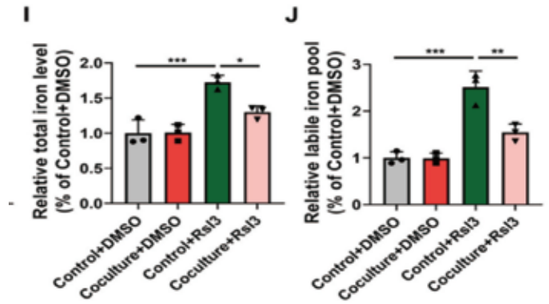
$$Fe^{2+} \xrightarrow{FerroZine} \text{有色络合物}$$

**使用总铁离子检测试剂盒发表的文章结果展示：**

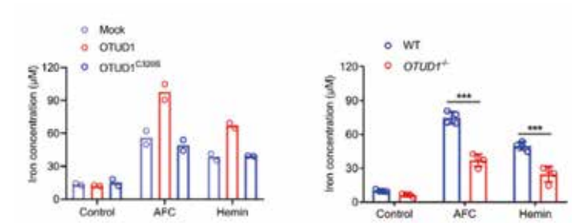
(I)Measurement of intracellular total iron level in Ht22 cells from culture alone, coculture with MSCs or MSC coculture combined with Cyto D treatment after RsI3 stimulation for 24 h (n=3 biological repeats for each group; Ordinary one-way ANOVA). (J) Quantitative analysis of the increase in MFI of Calcein-AM (FITC channel, subtracted the MFI treated without Deferiprone from the MFI treated with Deferiprone), reflected the amount of intracellular labile iron pool (LIP) in (K).








文献来源：Yao, Senyu, et al. “Mesenchymal stem cell attenuates spinal cord injury by inhibiting mitochondrial quality control-associated neuronal ferroptosis.” Redox Biology 67 (2023). IF:10.8



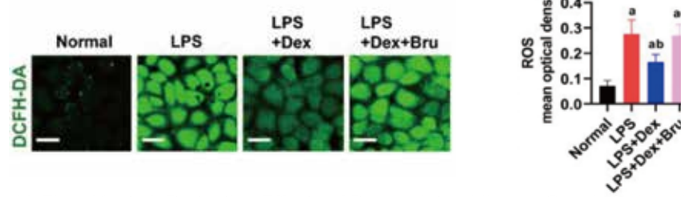

文献来源：Song J, Liu T, Yin Y, et al. The deubiquitinase OTUD1 enhances iron transport and potentiates host antitumor immunity[J]. EMBO reports, 2021. IF:9.4

# 脂质过氧化物和活性氧 ROS 检测

铁死亡的一个关键特征为细胞或组织内脂质过氧化物的积累，可通过检测丙二醛MDA的含量来衡量。在铁死亡过程中活性氧水平通常也会升高，可以使用DCFH-DA或DHE等荧光探针来检测。

| 货号 | 产品名称 | 规格 |
|---|---|---|
| C1300-1 | 活性氧检测试剂盒（绿色荧光 DCFH-DA） | 100-500 次 |
| C1300-2 | 活性氧检测试剂盒（红色荧光 DHE） | 100-500 次 |
| E2019 | 组织细胞丙二醛（MDA）检测试剂盒（TBA法） | 96 次 |

铁死亡研究中活性氧 ROS 水平检测结果展示：



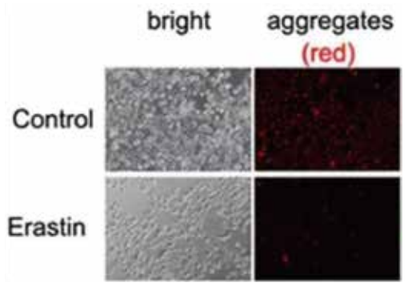

文献来源：She H, Hu Y, Zhou Y, et al. Protective Effects of Dexmedetomidine on Sepsis-Induced Vascular Leakage by Alleviating Ferroptosis via Regulating Metabolic Reprogramming. J Inflamm Res. 2021;14:6765-6782. Published 2021 Dec 10.

# 细胞活力和线粒体膜电位的检测

铁死亡可引起细胞活力下降，用铁死亡诱导剂，诱导细胞死亡，通过CCK-8等方法可检测细胞活力。铁死亡期间线粒体变小萎缩、致密化可通过透射电镜进行观察，而线粒体膜电位的下降，可使用JC-1等线粒体膜电位试剂盒进行检测。

| 货号 | 产品名称 | 规格 |
|---|---|---|
| E1008 | CCK-8细胞增殖毒性检测试剂盒 | 200 次　500 次<br>1000 次　3000 次<br>10000次 |
| C1260-50 | 线粒体和胞浆蛋白制备试剂盒（组织和细胞通用） | 50 次 |
| C1260-100 | 线粒体和胞浆蛋白制备试剂盒（组织和细胞通用） | 100 次 |
| C0008-50 | 线粒体膜电位检测试剂盒（JC-1） | 50 次 |
| C0008-100 | 线粒体膜电位检测试剂盒（JC-1） | 100 次 |

铁死亡研究中线粒体膜电位检测结果：




文献来源：Yang M, Liu K, Chen P, Zhu H, Wang J, Huang J. Bromodomain-containing protein 4 (BRD4) as an epigenetic regulator of fatty acid metabolism genes and ferroptosis. Cell Death Dis. 2022;13(10):912. Published 2022 Oct 29.

# 谷胱甘肽相关代谢物水平检测

铁死亡过程中谷胱甘肽（GSH）含量降低，可以通过比色法检测GSH、GSSG、总谷胱甘肽（T-GSH）、谷胱甘肽过氧化物酶（GSH-PX）、谷胱甘肽还原酶（GR）、谷氨酸（GLU）等指标的含量。





| 货号 | 产品名称 | 规格 |
|---|---|---|
| E2071 | 组织细胞还原型谷胱甘肽GSH和氧化性谷胱甘肽GSSG含量测定试剂盒 | 96 次 |
| E2014 | 组织细胞总谷胱甘肽过氧化物酶检测试剂盒 | 96 次 |
| E2013 | 组织细胞谷胱甘肽还原酶检测试剂盒 | 96 次 |
| E2015 | 组织细胞总谷胱甘肽（T-GSH）含量检测试剂盒 | 96 次 |
| E2077-48 | 组织细胞样本谷氨酸Glu含量测定试剂盒 | 48 次 |
| E2077-96 | 组织细胞样本谷氨酸Glu含量测定试剂盒 | 96 次 |
| E2079 | 组织细胞谷氨酰胺Gln含量测定试剂盒 | 48 次 |

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# 优势产品

- WB 一站式解决方案
- 全系列 ECL 发光液
- 全能胶
- 快速三剑客
- 脂代谢
- 糖代谢
- 肝功能
- 肾功能
- 铁死亡
- 线粒体
- 细胞凋亡
- 氧化应激
- 细胞增殖
- 能量代谢指标检测
- 细胞培养
- 细胞转染
- 免疫组化
- 特殊染色