



论文摘要

中南大学学报(自然科学版)

ZHONGNAN DAXUE XUEBAO(ZIRAN KEXUE BAN)

Vol.34 No.2 Apr.2003

[PDF全文下载] [全文在线阅读]

文章编号: 1005-9792(2003)02-0128-04

茚三酮比色法测定矿物表面吸附 浸矿细菌蛋白质含量

周吉奎¹, 钮因健², 邱冠周¹, 覃文庆¹

(1. 中南大学资源加工与生物工程学院, 湖南 长沙, 410083;
2. 中国有色金属工业技术开发交流中心, 北京, 100814)

摘要: 为了研究浸矿细菌在矿物表面的吸附量与金属浸出率的关系, 必须测定矿物表面吸附的细菌数量. 在100℃的水浴中, 用0.5 mol/L的NaOH溶液消化矿物表面的细菌时间为25 min, 然后用0.5 mol/L的HCl溶液中和至pH=7.0. 在2 mL中和液中加入1 mL茚三酮显色液, 在100℃的水浴中加热20 min, 冷却6 min后, 在波长为562nm时测定反应产物的吸光值A. 吸光值A对应溶液中的蛋白质含量, 进而对应着矿物表面吸附细菌的数量.

关键字: 茚三酮; 比色法; 蛋白质; 细菌; 吸附

Protein content of mineral-adhered bacterium by ninhydrin colorimetric method

ZHOU Ji-kui¹, NIU Yin-jian², QIU Guan-zhou¹, QIN Wen-qing¹

(1. College of Resources Processing and Bioengineering, Central South University, Changsha 410083, China;
2. Technology Development and Exchange Center of Nonferrous Metallurgical Industry, Beijing 100814, China)

Abstract: Biomass of bacterium on mineral surfaces is measured to study the relation between growth of adhered bacterium and metal dissolution. The mineral samples containing adhered bacterium are digested in 0.5 mol/L NaOH in a boiling water bath for 25 min. The digested soup then filtered and the filtrate is neutralised to pH= 7 using 0.5 mol/L HCl. Then 1 mL of reagent ninhydrin is added to 2 mL of protein extracted solution and mixed thoroughly. The mixed solution is heated in a boiling water bath for 20 min, then the boiled solution is cooled for 6 min. After development of the color, the absorbance is measured at 562 nm using a UV-1100 for the protein content, which provides a measure of the attached cell mass.

Key words: ninhydrin; colorimetric; protein; bacterium; attachment

有色金属在线

中国有色金属权威知识平台

版权所有：《中南大学学报(自然科学版、英文版)》编辑部

地址：湖南省长沙市中南大学 邮编：410083

电话：0731-88879765 传真：0731-88877727

电子邮箱：zngdx@mail.csu.edu.cn 湘ICP备09001153号