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化学反应法在活性氧测定中的应用及研究进展

邹轶, 彭健

华中农业大学动物科技学院, 武汉 430070

Application and Research Progress of Chemical-Detection Methods for Detection of Reactive Oxygen Species

ZOU Yi, PENG Jian

College of Animal Science and Technology, Huazhong Agricultural University, Wuhan 430070, China

- 摘要
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摘要 活性氧由于在人的衰老和疾病中扮演了重要的角色,在现代医学和分子生物学领域越来越受到人们的关注。体内活性氧水平作为机体遭受氧化损伤的重要指标,是区分生理和病理状态的关键问题。但活性氧由于反应活性高和半衰期短的特点,在体内和体外的准确测定仍然是一项难题。本文从活性氧化学反应法的测定原理和研究进展2个方面对分光光度法、化学发光法、荧光光度法和电子自旋共振法等4个化学反应方法进行综述,比较这几种方法在实际应用中的不同。

关键词: 活性氧 分光光度法 化学发光法 荧光光度法 电子自旋共振法

Abstract: Reactive oxygen species play an important role in the aging and disease for human, so that it gains more and more attention in the field of medicine and molecular biology. As an important index for injury of oxidation *in vivo*, reactive oxygen species level is the key problem for distinguishing physiological and pathogenic. However, due to the high reactivity and short half-life characteristics, it is a problem for the accurate detection of reactive oxygen species *in vitro* and *in vivo*. The measurement principle and research progress of the present main chemical reaction methods, i.e spectrophotometric method, chemiluminescence method, fluorophotometric method and electron spin resonance method, were reviewed in this paper, and the different characteristics of those methods in actual application were discussed.

Keywords: reactive oxygen species, spectrophotometric method, chemiluminescence method, fluorophotometric method, electron spin resonance method

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通讯作者 彭健,教授,博士生导师,E-mail:pengjian@mail.hzau.edu.cn

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