

马秋风 北京 首都师范大学化学系 100037

王秀东 北京 首都师范大学化学系 100037

邹 洪 北京 首都师范大学化学系 100037

摘要: 羟胺在碱性水溶液中发生自氧化反应产生的超氧阴离子自由基, 同时其自身被氧化为亚硝酸根离子, 在酸性介质中SCN⁻催化亚硝酸根离子与二苯胺反应生成具有电活性的亚硝基化合物, 在-0.67V处有一波形很好的二阶极谱峰。在一定条件下, 极谱峰电流的大小与亚硝酸根离子的浓度呈线性关系。超氧化物歧化酶(SOD)可催化超氧阴离子自由基发生歧化反应, 体系中加入SOD, 使生成的亚硝酸根离子的量减小。由此建立通过检测亚硝酸根离子的生成量来测定SOD活性的电化学方法, 测定酶活力曲线。当SOD浓度为0.227μg/mL时, SOD对盐酸羟胺自氧化的抑制率可达50%。并研究常见的黄酮类化合物对超氧阴离子自由基的清除作用。测定黄酮类化合物清除超氧阴离子自由基的I₅₀。

关键词:

文章全文为PDF格式, 请下载至本机浏览。[[下载全文](#)]

如您没有PDF阅读器, 请先下载PDF阅读器 [Acrobat Reader](#) [[下载阅读器](#)]

Determination of superoxide dismutase enzyme activity by hydroxylammonium autoxidation

100037

100037

100037

Abstract: In an alkaline medium, Hydroxyl ammonium reacted with dioxygen to form superoxide radical and nitrite ion. At low pH with thioyanate as catalyst, nitrite ion reacted rapidly and quantitatively with diphenylamine to form nitrate complex with electrochemical activity, which gave a sensitive second order derivative reduction wave with the peak potentials of -0.67V(SCE). Under the certain conditions the peak current was directly proportional to the concentration of nitrite ion. Superoxide dismutase(SOD) catalyze the dismutation of superoxide radical ($O_2^{\cdot -}$) into H_2O_2 and O_2 . The system with SOD inhibited the formation of nitrite ion. The electrochemical method for determination of SOD activity which was based on the detection of the formation of nitrite ion during autoxidation of Hydroxyl ammonium chloride was described and detected the curve of the SOD activity. The inhibition was reached to 50% as the concentration of SOD was 0.227μg/mL. The method has been applied into the research of scavenging activity of some flavonoids and determination of the I₅₀ of the flavonoids,

Key words:

[【大 中 小】](#) [[关闭窗口](#)]