



Regular article

Some observations on the spectrophotometric determination of amino acids via interaction with *p*-benzoquinone

Madlene L. Iskander , H.A.A. Medien[Show more](#)  Outline Share Cite[https://doi.org/10.1016/0026-265X\(90\)90116-M](https://doi.org/10.1016/0026-265X(90)90116-M)[Get rights and content](#)

Abstract

Spectrophotometric quantitative determination of amines and sulfa drugs via interaction with *p*-benzoquinone was extended to determination of amino acids, whereby the colored products obtained display maximum absorption at $\lambda = 490\text{--}500$ nm, $E_1 \text{ cm}^{1\%}$ in the range 160–480, and a concentration range of 1.5–34.0 $\mu\text{g/ml}$. The effects of time, concentration, temperature, and cooling on the nature of the reaction product were investigated. The reaction proved to be irreversible. A monosubstituent compound is more easily formed in the presence of excess *p*-benzoquinone. A linear relation between the formation constant (K_f) and $\text{p}K_a$ for the tested amino acids has been observed. Determination of adrenaline by this method is considered to offer an indirect means of determination of tyrosine.

[Previous](#)[Next](#)[Recommended articles](#)

Cited by (15)

[Determination of amino acids in gym supplements using digital images and paper platform coupled to diffuse reflectance spectroscopy and USB device](#)

2019, Talanta

[Show abstract](#) 

[Spectroscopic investigation of the interaction of p-benzoquinone with casein in the solid state](#)

2010, Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy

[Show abstract](#) 

[A study of reaction between quinones and thiourea: Determination of thiourea in orange juice](#)

2004, Journal of Food Composition and Analysis

[Show abstract](#) 

[Spectrophotometric determination of cysteine and/or carbocysteine in a mixture of amino acids, shampoo, and pharmaceutical products using p- benzoquinone](#)

1999, Talanta

[Show abstract](#) 

[Spectrophotometric method for determination and kinetics of amino acids through their reaction with syringaldehyde](#)

1998, Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy

[Show abstract](#) 

[Flow-injection spectrophotometric determination of adrenaline and dopamine with sodium hydroxide](#)

1996, Journal of Pharmaceutical and Biomedical Analysis

[Show abstract](#) 



[View all citing articles on Scopus](#)

[View full text](#)

Copyright © 1990 Published by Elsevier B.V.

