



Letter

# Spectrophotometric method for determination and kinetics of amino acids through their reaction with syringaldehyde

H.A.A Medien

[Show more](#)

Outline

Share

Cite

[https://doi.org/10.1016/S1386-1425\(98\)00004-3](https://doi.org/10.1016/S1386-1425(98)00004-3)[Get rights and content](#)

## Abstract

A spectrophotometric method is described for the determination of amino acids. The method is based on the reaction between amino acids and syringaldehyde at pH 9.0, by which a color is developed with maximum absorption at 420 nm in aqueous methyl alcohol. The absorption of the product obeys Beer's law within the concentration range of 0.025–0.5 mM of original amino acid. The kinetics of the reaction follows overall second order kinetics, first order in each of the reactants. The rates of the reaction were investigated as a function of pH of the reaction medium and structure of the amino compounds. Logarithms of the second-order rate constants increased with amino acid anion concentration as the pH was increased. The mechanisms of the reaction have been discussed.

[Previous](#)[Next](#)

## Keywords

Spectrophotometry; Amino acids; Syringaldehyde

[Recommended articles](#)

Cited by (16)

[Novel highly sensitive conductometric biosensor based on arginine deiminase from \*Mycoplasma hominis\* for determination of arginine](#)

2022, Sensors and Actuators B: Chemical

[Show abstract](#) ▾

[Multi-spectroscopic \(FT-IR, FT-Raman, <sup>1</sup>H NMR and <sup>13</sup>C NMR\) investigations on syringaldehyde](#)

2021, Journal of Molecular Structure

[Show abstract](#) ▾

[Starch-based C-dots from natural Gadong tuber as pH fluorescence label for optical biosensing of arginine](#)

2020, Optics and Laser Technology

[Show abstract](#) ▾

[L-arginine biosensors: A comprehensive review](#)

2017, Biochemistry and Biophysics Reports

[Show abstract](#) ▾

[Experimental and DFT dimer modeling studies of the H-bond induced-vibration modes of L-β-Homoserine](#)

2017, Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy

[Show abstract](#) ▾

[Vibrational spectral analysis of dl-valine dl-valinium and dl-methionine dl-methioninium picrates](#)

2006, Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy

[Show abstract](#) ▾



[View all citing articles on Scopus](#)

[View full text](#)

Copyright © 1998 Elsevier Science B.V. All rights reserved.



Copyright © 2022 Elsevier B.V. or its licensors or contributors.  
ScienceDirect® is a registered trademark of Elsevier B.V.

