Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense*)
Lat. Am. J. Pharm. **41** (4): 741-6 (2022)

Received: December 28, 2021
Revised: February: 14, 2022
Accepted: February 15, 2022

Determination of the Protonation Constants and Study on Solvent Effect for Glycyl-asparagine in Different Aqueous Solutions of Methanol and at Constant Temperatures

Niloofar Soltani AHMADI [1], Farhoush KIANI [2] *, Ahmad SHAHIDI [1] & Azadeh G. Hasan SARAEI [1]

[1] *Department of Food Science and Technology, College of Agriculture and Food Science, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran*

[2] *Department of Chemistry, Faculty of Science, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran*

***SUMMARY*. In this work, the protonation constants for deprotonation processes of glycyl-asparagine, K_1, K_2, were determined in binary mixed solvents of water–methanol, containing 0, 10, 20, 30, 40, 50, 60, 70, and 80 % (v/v) methanol, at T = 298.15 K and constant ionic strength (0.1 mol.dm^{-3} NaCl). Determined data were analyzed using Kamlet, Abboud, and Taft parameters. In these processes, the spectrophotometric and potentiometric methods were used to determine the values of K_1 and K_2.**

RESUMEN. En este trabajo se determinaron las constantes de protonación para procesos de desprotonación de glycyl-asparagina, K1, K2, en solventes mixtos binarios de agua-metanol, conteniendo 0, 10, 20, 30, 40, 50, 60, 70 y 80 % (v/v) metanol, a T = 298,15 K y fuerza iónica constante (0,1 mol.dm^{-3} NaCl). Los datos determinados se analizaron utilizando los parámetros de Kamlet, Abboud y Taft. En estos procesos se utilizaron los métodos espectrofotométricos y potenciométricos para determinar los valores de K_1 y K_2.

KEY WORDS: changes of enthalpy, changes of entropy, changes of Gibbs free energy, glycyl-asparagine, potentiometric, protonation constants, spectrophotometric.

* Author to whom correspondence should be addressed. *E-mail:* Farhoush_kiani@yahoo.com

ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)