



**Effect of Non-Ionic Micelles on Protonation Equilibria of
L-Dopa And Catechol**

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Accepted on 7th January 2015

ABSTRACT

The effect of Triton X-100 (TX100) on the protonation equilibria of L-Dopa and Catechol has been studied in various concentrations (0.0-2.5% v/v) of TX100 solution maintaining an ionic strength of 0.16 mol L⁻¹ at 303 K. The best fit chemical models have been selected based on statistical grounds employing crystallographic R factor, χ^2 , skewness, kurtosis and the protonation constants have been calculated with the computer program MINQUAD75. Dopa has three dissociable protons and one amino group which associate with proton. It exists as LH⁴⁺ at low pH and gets deprotonated with the formation of LH₃, LH₂ and LH²⁻ successively with increase in pH. Catechol has two dissociable protons. It exists as LH₂ at low pH and gets deprotonated with the formation of LH and L²⁻ with increasing pH. The trend of log values of step-wise protonation constants with mole fraction of the medium has been explained based on electrostatic and non-electrostatic forces operating on the protonation equilibria.

Keywords: Protonation equilibria, MINQUAD75, Triton X-100, L-Dopa, Catechol.
