

Turkish Journal of Chemistry

Turkish Journal

of

Chemistry

An Atropisomeric Chiral 2,2'-bipyridyl-3,3'-dicarboxylic Acid and Corresponding Platinum(II) Complex

Abdurrahman ŞENGÜL

Department of Chemistry, Zonguldak Karaelmas University, Zonguldak-TURKEY

e-mail: abdurrahmans2002@yahoo.co.uk

 [Keywords](#)
 [Authors](#)



chem@tubitak.gov.tr

[Scientific Journals Home Page](#)

Abstract: 2,2'-Bipyridyl-3,3'-dicarboxylic acid (H_2BDC) spontaneously resolves on crystallization from water, giving monohydrated crystals of the space group $P2_12_12_1$. In any individual crystal, all the atropisomeric-skewed molecules are of one hand; however, on dissolution in water, optical activity is lost. Strong hydrogen bonding leads to a helical structure, via O--H ... N links, and 3 further strong bonds between water and carboxylate groups produce a framework structure. The pK_a values measured for H_2BDC (3.18 \pm 0.04 and 4.59 \pm 0.02 at 20 \pm 1 $^\circ C$, in dilute aqueous solution) agree with the zwitterionic form. The reaction of H_2BDC with potassium tetrachloroplatinate(II) in water gives $Pt(H_2BDC)Cl_2 \cdot H_2O$. The complex was characterized by elemental analysis and spectroscopic techniques.

Key Words: Platinum complexes, 3,3'-dicarboxyl-2,2'-bipyridine ligand, Crystal structure, Spontaneous resolution, Hydrogen bonding

Turk. J. Chem., **28**, (2004), 703-714.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Chem., vol.28,iss.6.](#)