

Synthesis, structure and biological ability of organotin carboxylate derived from modified amino benzo thiazole

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A novel ligand, 2-[(1,3-benzothiazol -2-yl) amino] acetic acid (BAA), has been prepared by condensation reaction of 2-aminobenzothiazole with chloroacetic acid. BAA prepared ligand has been applied to prepare three different organotin carboxylate complexes *via* condensation reactions with a salt of corresponding organotin(IV) chloride. The synthesized ligand BAA and complexes have been systematically identified *via* the use of Fourier transform infrared spectroscopy (FTIR), multinuclear magnetic resonance spectroscopy (¹H and ¹¹⁹Sn NMR), and carbon (C), hydrogen (H) and nitrogen (N) elemental analysis, checking their fundamental integrity. BAA antioxidant ability and their organotin(IV) carboxylate complexes have been estimated *via* different established methods: CUPRAC (Cu ion Reducing Antioxidant Capacity) and DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging assays. Results point towards all organotin(IV) carboxylate complexes showing significantly larger inhibition percentages in contrast to free BAA ligand, underlining the serious role of the Tin(IV) centers in raising antioxidant ability. Particularly, the Ph₃Sn(IV)COO-complex has demonstrated superior functioning by both methods, assigned to its noticeable steric and electronic properties resulting from the Ph₃ group substituents.

Keywords: Ability, Amino benzothiazole, Condensation reaction, Organotin-carboxylate complex