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The study of complexation PdCl₂ with 1-substituted 3,5-dimethylpyrazoles

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At the first, we have investigated the interaction of recently obtained 1-substituted derivatives of 3,5-dimethylpyrazole in general formula (L) to PdCl₂ according to scheme 1. The experiments have shown that the reaction of complexation does not proceed when molar ratio ligand : acceptor (L : PdCl₂) is 1:1. The importance of assumption demonstrated denticity pyrazolic ligand in the process of complexation was necessary to prove the synthesis and utilization of bidentate pyrazolic ligand. For this purpose, we synthesized corresponding 5 oxim on the base of compound 4 and studied its complexation with PdCl₂ according to scheme 2. IR, ¹H NMR and X-ray analysis were confirmed that the coordination in compound 5 with PdCl₂ involve atom nitrogen N² of cycle and atom nitrogen of imine group of oxim. The coordination compound 6 contains organic molecule cation Pd²⁺ and two chlorine anions compensating the positive charge on Pd²⁺. The molecule adopts only E-configuration and has an asymmetric center on C11 atom, but due to space group symmetry (C2/c) the compound is racemic mixture of R(E-) and S(E-) conformers. An investigation of the anticonvulsant properties of compound 6 shows that the anticonvulsant effect of 60% was detected in mice with a 50 mg/kg dose of carcinoma spasm. In the same dosage, compound 6 does not cause muscle relaxation in the "rotating rope" test.

Biography

H N Khachatryan has completed her Master's degree at Chemical faculty of Yerevan State University in 2014 under supervision of L Galstyan. Currently, she is pursuing her PhD since 2015 under supervision of S Hayotsyan and Prof. H Attaryan. During her scientific work, she has published 8 articles. Her research interest is aza-Michael reaction through azoles in free solvent, free catalyst systems. She has participated in 4th International Conference of Young Scientists Chemistry-2014, Yerevan, Armenia and 2nd European Organic Chemistry Congress, Amsterdam, Netherland.

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