Title:	Syntheses and characterization of neutral and cationic cyclic (alkyl)(amino)carbene mercury [cAAC-Hg(II)] complexes
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Abstract:	Reactions of cyclic (alkyl)(amino)carbenes, cAACMe and cAACcy with equimolar quantity of HgX2 salts afforded their corresponding halide bridged dimeric complexes, [cAACMeHgCl(μ-Cl)]2 (1), [cAACcy·HgCl(μ-Cl)]2 (2), [cAACMe·HgI(μ-I)]2 (3) and [cAACcy·HgI(μ-I)]2 (4) (Me = methyl and cy = cyclohexyl). It has been possible to perform stepwise substitution of Br− in [cAACcy·HgBr(μ-Br)]2 with NO3− leading to the isolation and characterization of the mononitrate species, cAACcy·HgBr(NO3) (5) and the dinitrate compound [cAACcy·Hg(NO3)(μ-NO3)]2 (6). The cationic mercury species, [(cAACMe)2Hg(NO3)]+[NO3]– (7) has also been synthesized by the reaction of adduct, [cAACMe·HgBr(μ-Br)]2 with 2 eq. of AgNO3. On reaction of [cAACcy·HgCl(μ-Cl)]2 (2) with AgClO4, only one chlorine could be substituted by perchlorate resulting in the formation of chlorine bridged dimeric complex, [cAACcy·Hg(ClO4)(μ-Cl)]2 (8). On performing the reaction between cAACcy and HgCl2 in 2:3 relative stoichiometry, a dicationic mercury species [(cAACyc)2Hg]2+ [Hg2Cl6]2– (9) was isolated in moderate yield.
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