show that: *i)* the gas-phase minimum energy conformation corresponds to that found in Taxotere while all other conformers have energy at least 2.0 kcal/mole higher; *ii)* when simulating a polar solvent by the continuum Onsager method, there are five different conformations differing by less than 1.0 kcal/mole, suggesting their possible coexistence in solution in keeping with the NMR results; *iii)* among these five conformations one is similar to that found in the crystal structure of Paclitaxel.

PS05.01.12 THE EFFECT OF SOLVENT AND CONFORMATIONAL CHANGES ON THE ELECTRON DENSITY AND ELECTROSTATIC POTENTIAL OF TAMOXIFEN [p-(DIMETHYLAMINO-2 ETHOXY)PHENYL]-1 *TRANS*-DIPHENYL-1,2 BUTENE-1. Dan A. Buzatu, and Edwin D. Stevens, Dept. of Chemistry, University of New Orleans.

The goal of the study was to investigate the effect of conformational changes and solvent on the electron density and electrostatic properties of the antitumor drug Tamoxifen. The different geometries were obtained by doing a molecular dynamics simulation using water as the solvent in C.H.A.R.M.M. The density and electrostatic potential surface for each conformation was calculated from experimental multipole model densities by assuming that the multipoles coordinate systems follow the changes in the atomic positions, and their populations remain unchanged. The X-ray data was collected using Mo Kα radiation at 100 K. These results were then compared with densities and electrostatic potential surfaces obtained from ab initio calculations at the 6-31G* level for the same conformations. The ultimate aim of this work is to simulate the behavior of a drug in blood.

PS05.01.13 FREE RADICAL CATION TETRACUPRO SALTS OF ANTIHISTAMINES. Masood_Parvez and Aaliya P. Sabir, Department of Chemistry,University of Calgary, Calgary, Alberta, Canada T2N 1N4

The free radical cations of a number of anti-histamines effective on H_1- receptor sites, e.g., clemizole (1), chlorpyramine (2) and triprolidine (3) have been synthesized and the crystal structures of the dications of these drugs in association with $CuCl_4^{2-}$ determined by the single crystal XRD method.

Crystal data:

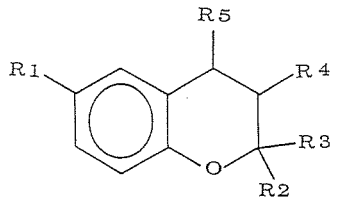
(1) $C_{19}H_{21}N_3 \cdot CuCl_4$, $M_r = 496.75$, triclinic, P 1, a= 9.595(5), b= 14.008(4), c= 9.413(5) Å, a= 93.53(3), ,ß= 117.14(4), γ = 85.03(3)°, V= 1121.3(10) Å^3, Z= 2, D_c = 1.47 Mg m^{-3}, λ(Mo Kα) = 0.71069 Å, ∝= 1.459 mm^{-1}, R = 0.039, wR = 0.036 for 2388 observed data with $I > 3\sigma(I)$.

(2) $C_{16}H_{22}ClN_3 \cdot CuCl_4$, M_r= 497.18, monoclinic, P21/a, a = 14.355(2), b= 7.836(2), c= 20.353(2) Å, ß= 106.74(1)°, V = 2192.3(6) Å^3, Z=4,D_c= 1.51 Mgm^{-3},l (MoKα)=0.71069Å, μ= 1.610mm^{-1}, R=0.036, wR =0.035 for 1212 observed data with $I > 3\sigma(I)$.

(3) $C_{19}H_{24}N_2 \cdot CuCl_4$, M_r = 485.77, monoclinic, P21/n, a= 10.100(2), b= 11.777(3), c= 18.291(2) Å, ß= 94.32(1)°, V= 2169.6(7) Å^3, Z=4,D_c= 1.49Mgm^{-3}, λ (MoKα)=0.71069Å, μ= 1.512mm^{-1}, R=0.092, wR= 0.086 for 1176 observed data with $I > 3\sigma(I)$.

PS05.01.14 CONFORMATIONAL ANALYSES OF FIVE NOVEL SMOOTH MUSCLE RELAXANT AGENTS. Qing-chuan YANG, Hong-ming LI, You-qi TANG (Department of Chemistry, Peking University, Beijing 100871, PRC) Wenlong Huang (Institute of Pharmacochemistry, China Pharmaceutical University, Nanjing 210009, PRC)

The benzopyran compounds have been extensively studied as potassium channel activator which relax smooth-muscle and lower blood pressure. Praeruptorin C isolated from chinese "Qian-Hu" herbal drug, also belonging to benzopyran compound, was demostrated to cause inhibition of the calcium-induced tension development in vascular smooth muscle and myocardial muscle, similar the effects of a calcium antagonist. According to the molecular feature of praeruptorin C, 50 analogue compounds were synthesized. the conformational analyses of the five compounds showing higher inhibition of the calcium entry into smooth muscle cells induced by high-K^+ were carried out with single-crystal X-ray analyses.



Compound	R1	R2,R3	R4	R5
1	NO_2	CH3	H	:NOCOC$_6$H$_5$
2	NO_2	CH3	4-ClC$_6$H$_4$COO	4-ClC$_6$H$_4$COO
3	CN	CH_3	OH	OH
4	CN	CH_3	H	4-(CH$_3$O)C$_6$H$_4$COO
5	CN	cyclo(CH$_2$)$_5$	H	:NOCOCH$_3$

PS05.01.15 STRUCTURE - ANTIVIRAL ACTIVITY CORRELATION OF CONFORMATIONALLY RESTRICTED NUCLEOSIDE ANALOGS. Gurskaya G.V.,* Zavodnik V.E., Krayevsky A.A., Engelhardt Institute of Molecular Biology, Russian, Academy of Sciences, 32 Vavilov Str., 117984 Moscow, Russia, *Karpov Institute of Physical Chemistry, 10 Obukha Str. 103064 Moscow, Russia

Recent search for new drugs revealed some modified nucleosides with antiretroviral activity, including the anti-HIV. The molecular mechanism of such activity is based on incorporation of their 5'-triphosphates into the new DNA strand during catalysis by DNA-polymerases and viral reverse transcriptases and ensuing interruption (termination) of elongation. In the case of viruses this results in inhibition of their reproduction. The modified nucleoside triphosphate affinity to each type of DNA-polymerase is determined both by the chemical nature of substituent groups in the nucleoside moiety and molecular conformation of nuc-leoside analogs.To investigate the structure - activity correlations, we studied X-ray structures of some conformationally restricted modified nucleoside series : 3'- methyl nucleoside analogs; 2',3'-dideoxy-2',3'-didehydronucleosides; nucleosides containing in their furanose cycles an additional three-membered fused ring in endo- or exorientation, as well as conformationally restricted compounds with an additional oxymethyl group at 4'-position. It can be suggested that the conformation of such conformationally restricted nucleosides is preserved in the DNA-synthesizing complexes, and mimicks the active conformation of a native substrate if conformationally restricted nucleotides reveal substrate properties.