03.3-10 MOLECULAR STRUCTURE ANALYSIS OF SOME 1,4-BENZODIAZEPINES. By N.M. Blaton, O.M. Peeters, C.L. Verlinde and C.J. De Ranter, Laboratorium voor Analytische Chemie en Medicinale Fysicochemie, Instituut voor Farmaceutische Wetenschappen, K.U.Leuven, Van Evenstraat 4, B-3000 Leuven, Belgium.

1,4-Benzodiazepines are no longer a unique class of anxiolytic, anticonvulsant and sedative drugs belonging to the group of minor-tranquilizers. Since 1982) (1) a new class of 1,4-benzodiazepines has been discovered. They have lost their affinity for benzodiazepine binding sites but have acquired a moderate to high affinity for opiate receptors.

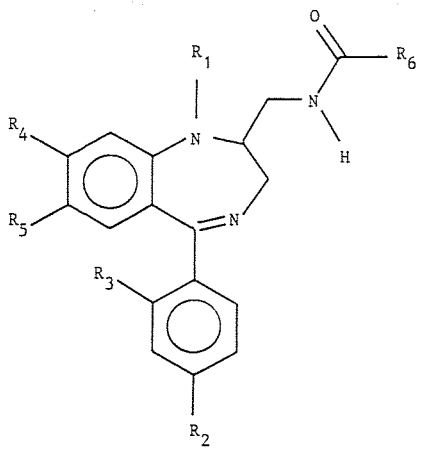
The crystal structure analyses of the four compounds, listed in Table 1, have been undertaken as part of a thorough study on a series of related compounds with various substituents. Their detailed conformational features are compared to the already structurally determined prototype compound Tifluadom (2). The characteristics of the seven-membered ring and the spatial orientation of the functional groups will be discussed.

Table 1

Compound	Salt	R1	R2	R3	R4	R5	R6
KC-4-5050	HCl	CH_3	H	H	H	CH_3	thienyl
KC-4-5340	HCl	CH_3	H	H	Cl	H	furanyl
KC-4-5593	HCl	CH_3	H	H	CH_3	H	furanyl
KC-4-7493A	Tosylate	CH_3	Cl	Cl	O-CH_3	H	furanyl
Tifluadom	Tosylate	CH_3	H	F	H	H	thienyl

(1) D. Römer, H.H. Büscher, R.C. Hill, R. Maurer, T.J. Petcher, H. Zeugner, W. Benson, E. Finner, W. Milkowski & P.W. Thies, (1982a). Nature (London), 298, 759-760

(2) T.J. Petcher, A. Widmer, U. Mätzel & H. Zeugner, (1985). Acta Cryst. C41, 909-912



03.3-11 THE CRYSTAL AND MOLECULAR STRUCTURE OF SULPHINPYRAZONE, Ca. $C_{23}H_{20}N_2O_3S.\ H_2O$. By H.C. Patel and T.P. Singh, Department of Biophysics, All India Institute of Medical Sciences, New Delhi - 110 029, India.

Sulphinpyrazone is an important uricosuric and antiplatelet agent. It has been crystallized from ethanol in the presence of calcium in triclinic space group $P\bar{1}$ with a = 11.336(2), b = 13.829(3), c = 14.075(4)Å, α = 76.00(5), β = 85.82(5), γ = 85.11(4)°, V = 2130(2)Å^3, dm = 1.342(3), Z = 4, dc = 1.326(1)Mgm^{-3}. The structure has been determined by direct methods using Karle recycling and refined to an R value of 0.075 for 3676 observed reflections. There are two sulfinpyrazone and one water molecules in the asymmetric unit. The calcium cation is located at (0,0,0) position. The molecular dimensions of the crystallographically inde - pendent molecules are essentially similar but their conformations are entirely different. Various dihedral angles in molecule A are -79.8(4), 67.3(4), 63.2(5), -40.4(4), -52.7(5), 179.5(5), 75.3(4) and 94.9(5)° while the corres-ponding angles in molecule B are 64.4(4), 42.8(4), 74.3(5), 49.3(4), 44.7(4), 87.6(5), 124.7(4), 96.3(5) and 6.1(4)°. Due to the presence of calcium cation the molecules are deprotonated and the hydrogen atoms from the tetrahedral positions in the pyrazole rings are removed. The protonated oxygen atoms in the pyrazolidione moiety provide the strongest intermolecular hydrogen bonded link of 2.46(2)Å between two crystallographically inde-pendent molecules. The distance between these protons is 1.0(2)Å which suggest that they undergo a flip-flop action. The structure is primarily stabilized by hydrogen bonds, calcium coordination and van der Waals interaction.