since they also bind Mg^{++}, though with a much lower affinity (Kd = 10^{-4} *M*); the second class comprises two sites specific for Ca^{++} with a Kd of 2×10^{-5} *M* [4, 5].

Two preparations were obtained by lyophilizing: first, 0.2 m*M* TNC in 0.38 m*M* $CaCl_2$; second, 0.2 m*M* TNC in 0.7 m*M* $CaCl_2$ and 2 m*M* $MgCl_2$.

In the first preparation calcium is bound only at the high affinity sites, while in the second both the high and low affinity sites for Ca^{++} should be occupied.

Our results show that the XANES of the two high affinity sites of TNC in the absence of Mg^{++} are very similar to those found in parvalbumin [2], suggesting an octahedral symmetry typical of the EF hand. The XANES of TNC shows different features under more physiological conditions, *i.e.* in presence of Mg^{++} and with all the four Ca^{++} sites occupied. The XANES structures are then broader probably because two different types of sites are occupied by Ca^{++}: the Mg-modified high affinity sites and the low affinity sites. The XANES of the latter sites are clearly different both for a chemical shift of the transitions to t_{1u} final states of about 0.4 eV toward lower energies and for a different splitting of the structures. The different features of XANES should be associated with a different Ca–O charge transfer, a variation of the Ca–O distance and a distortion of octahedral symmetry.

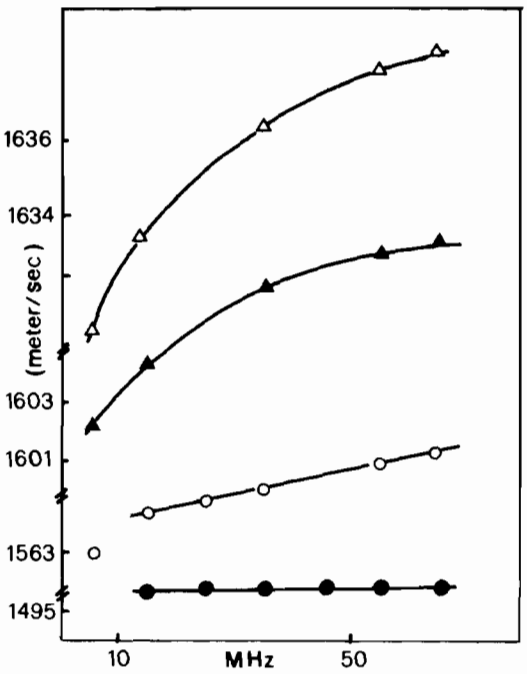

Fig. 1. Sound velocity *vs.* frequency at c = 0.08, ●; c = 0.34, ○; c = 0.47, ▲; and c = 0.72, △, mol/l.

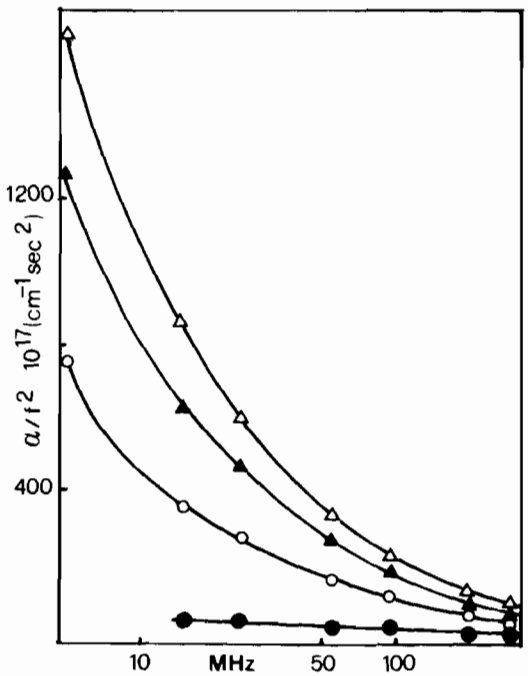

Fig. 2. Ultrasonic absorption *vs.* frequency at c = 0.08, ●; c = 0.34, ○; c = 0.47, ▲; and c = 0.72, △, mol/l.

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Ultrasonic Propagation in Highly Concentrated Bile Salts Aqueous Solutions

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To investigate the solute–solvent interaction between bile salts and water molecules [1, 2] ultrasonic absorption and velocity of aqueous solutions of sodium deoxycholate have been measured at 20 °C as a function of frequency (5–300 MHz) and concentration. Experimental results are in agreement with previous literature data [3]. Measurements of density

and viscosity have been also performed in order to evaluate the absorption values derived from classical equation [4].

Results can be summarized as follows:

i) velocity dispersion is present at the higher concentrations. Its magnitude slightly increases with composition (Fig. 1);

ii) large absorption excesses are observed in concentrated solutions.

They decrease with concentration (Fig. 2).

A comparison of the experimental losses with the 'classical' (viscosity) ones indicated that shear viscosity relaxation processes are present in highly concentrated solutions. Analysis of the absorption spectra also indicates the presence of structural relaxation phenomena [5] due to monomer–micelle and micelle–micelle equilibria. It appears possible to separate and evaluate the contributions from the several types of relaxation processes. They appear to be consistent with the observed magnitudes of the velocity dispersion.

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