STUDIES OF HYDRATED NUCLEIC ACID BASE CLUSTER CONFORMERS SOLVATED IN HELIUM NANODROPLETS: VIBRATIONAL TRANSITION MOMENT ANGLES (VTMAS) MEASUREMENTS.

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Multiple isomers of nucleic acid base (NAB)-water complexes formed in superfluid helium nanodroplets are studied by high resolution infrared laser spectroscopy. The identification and structural characterization of several tautomeric biomolecule-water complexes (e.g. uracil-water, cytosine-water, adenine-water, and etc.) will be presented. We describe here a tool, which aids in the assignment of each vibrational band by measuring the direction of the vibrational transition moment for the corresponding band. High level ab initio calculations are used to obtain theoretical VTMAs for comparison with experimental values.