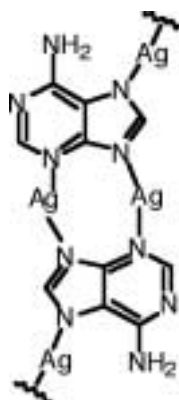


PROBING THE GAS PHASE CHEMISTRY OF CHARGED SILVER (I) ADENINE POLYMERS, $[x\text{Ad}+y\text{Ag}-z\text{H}]^{(y-z)+}$, VIA MULTISTAGE MASS SPECTROMETRY EXPERIMENTS

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Electrospray ionization mass spectrometry (ESI/MS) has emerged as a powerful new tool in characterising the interactions between biological molecules such as DNA and proteins and bare metal ions and metal complexes. We have examined the gas phase chemistry of polymeric complexes of the type $[x\text{Ad}+y\text{Ag}-z\text{H}]^{(y-z)+}$ formed via electrospray ionization of solutions containing silver (I) and the nucleobase adenine using multistage mass spectrometry (ESI/MSⁿ). In particular, the collision-induced dissociation (CID) and ion-molecule reactions were determined for mass selected complexes and these experimental results are supported by density functional theory calculations of potential structures.



(A)

The results are consistent with a polymeric structure of type (A). Several novel fragment ions can be formed via CID including the radical cation $[\text{Ad}+\text{Ag}-\text{H}]^+$, which exhibits different gas phase behaviour to the even electron ion $[\text{Ad}+\text{Ag}]^+$.