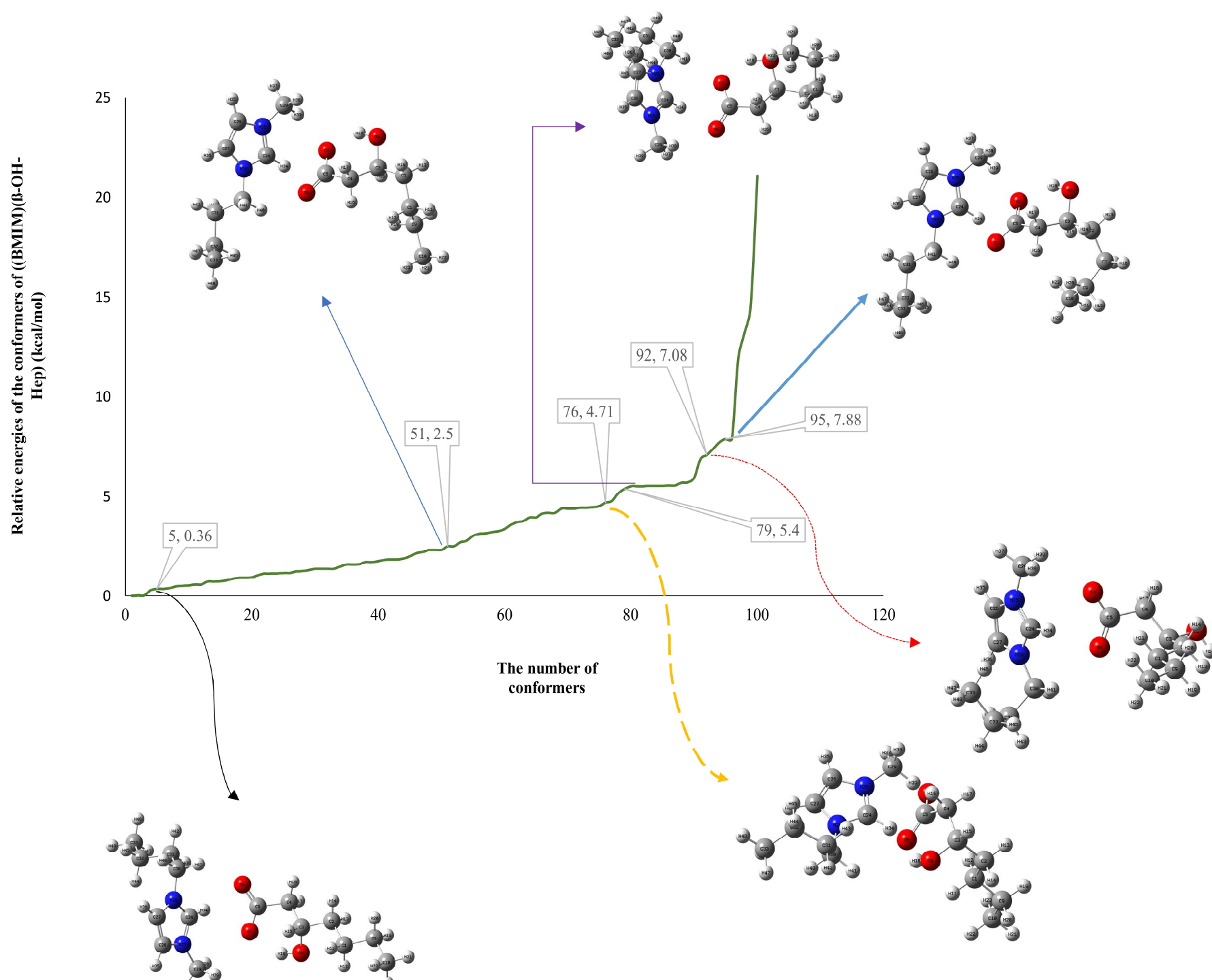
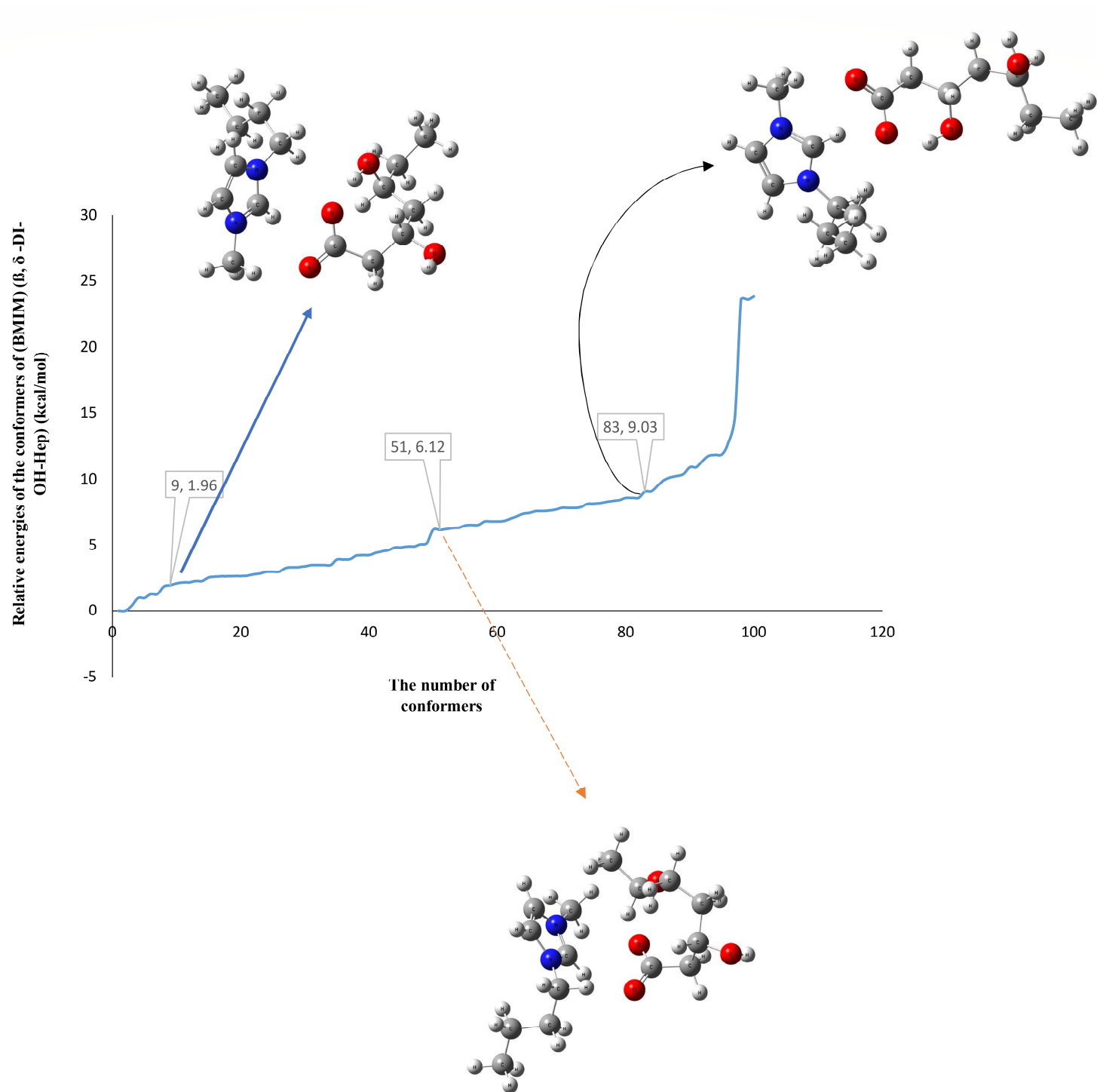


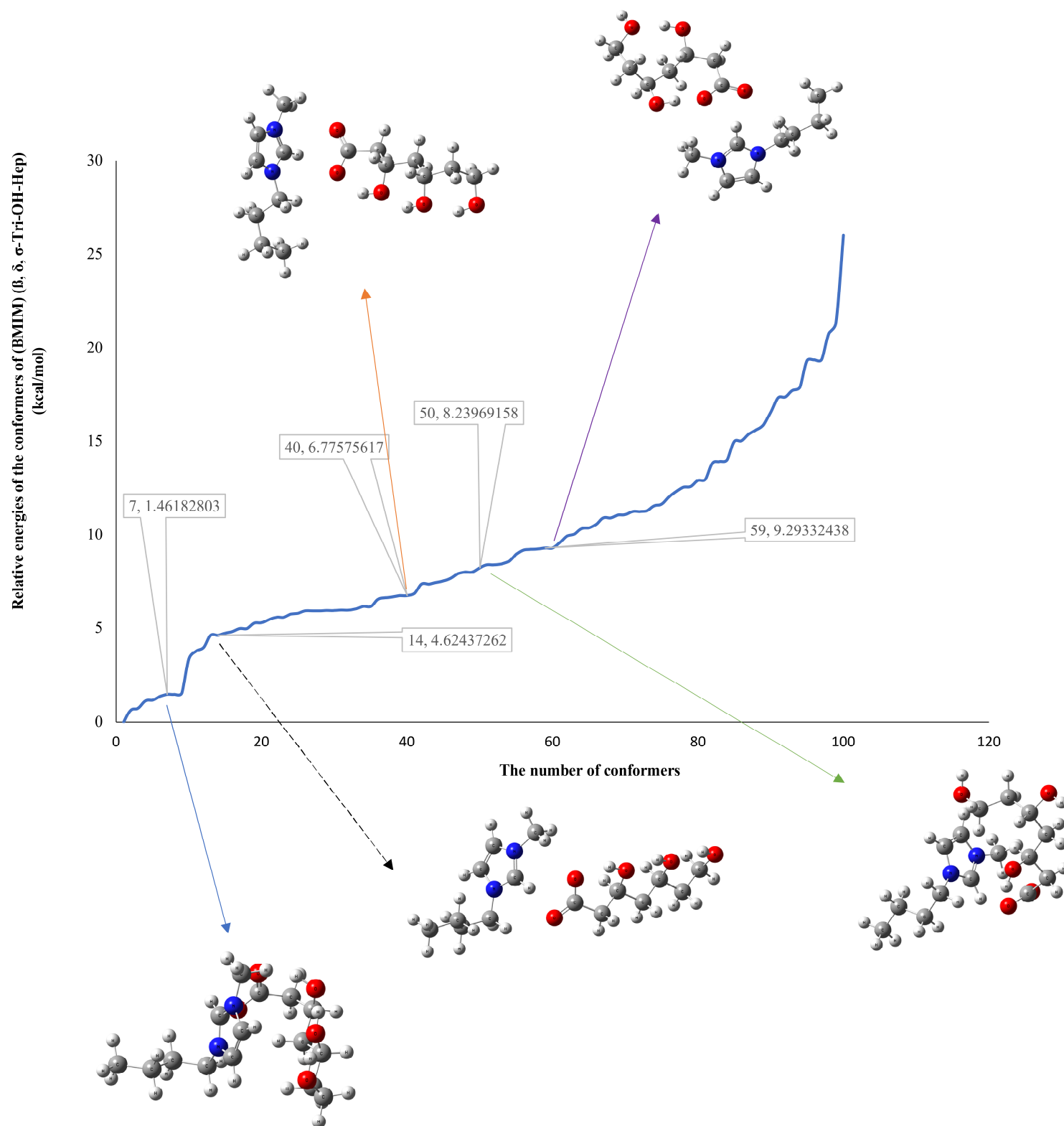
**Figure S7.** Relative energies of the conformers of (BMIM)(Hep) with respect to the most stable conformer



**Figure S8.** Relative energies of the conformers of (BMIM)(β-OH-Hep) with respect to the most stable conformer

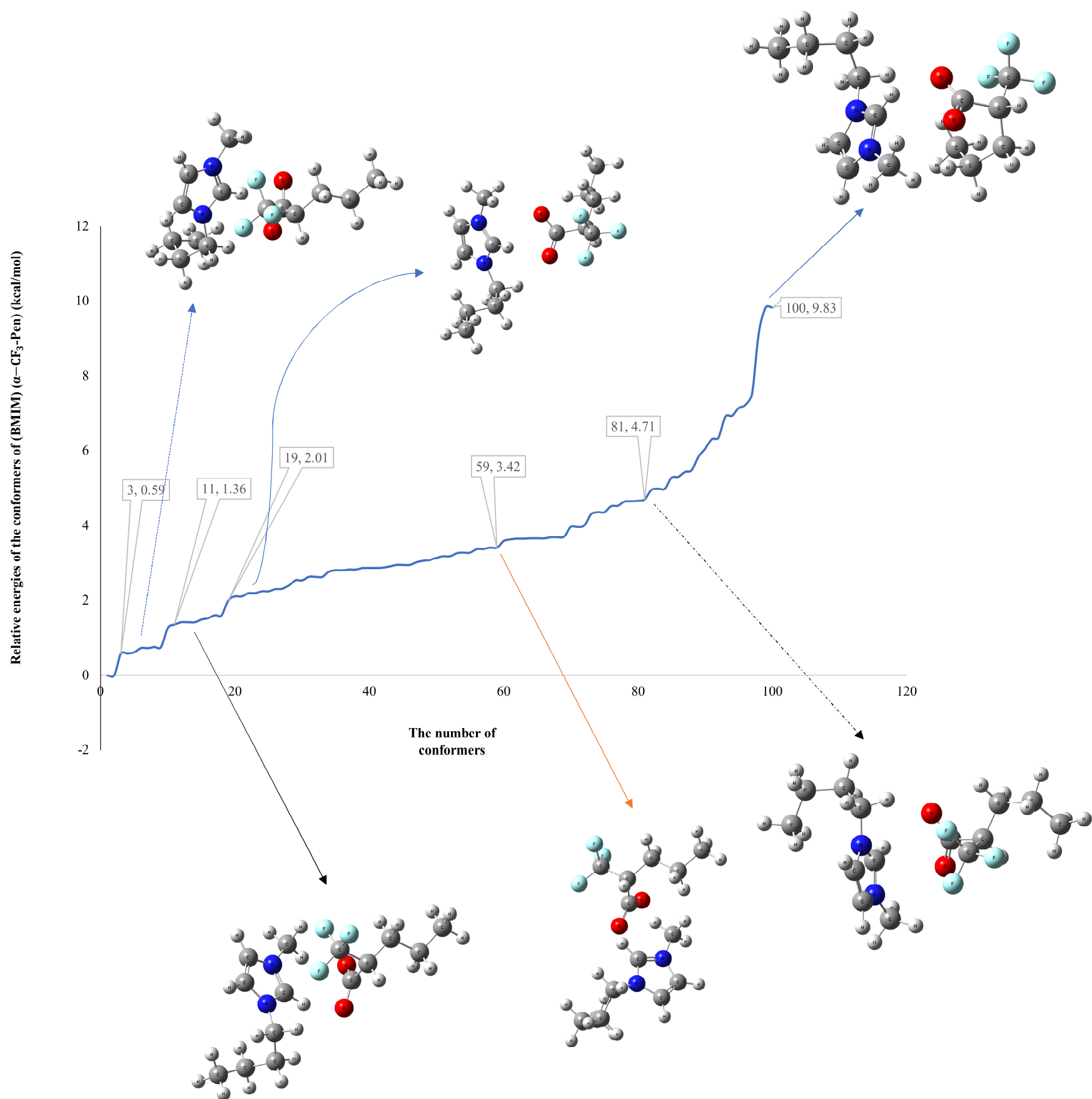


**Figure S9.** Relative energies of the conformers of (BMIM) ( $\beta$ ,  $\delta$  -DI-OH-Hep) with respect to the most stable conformer

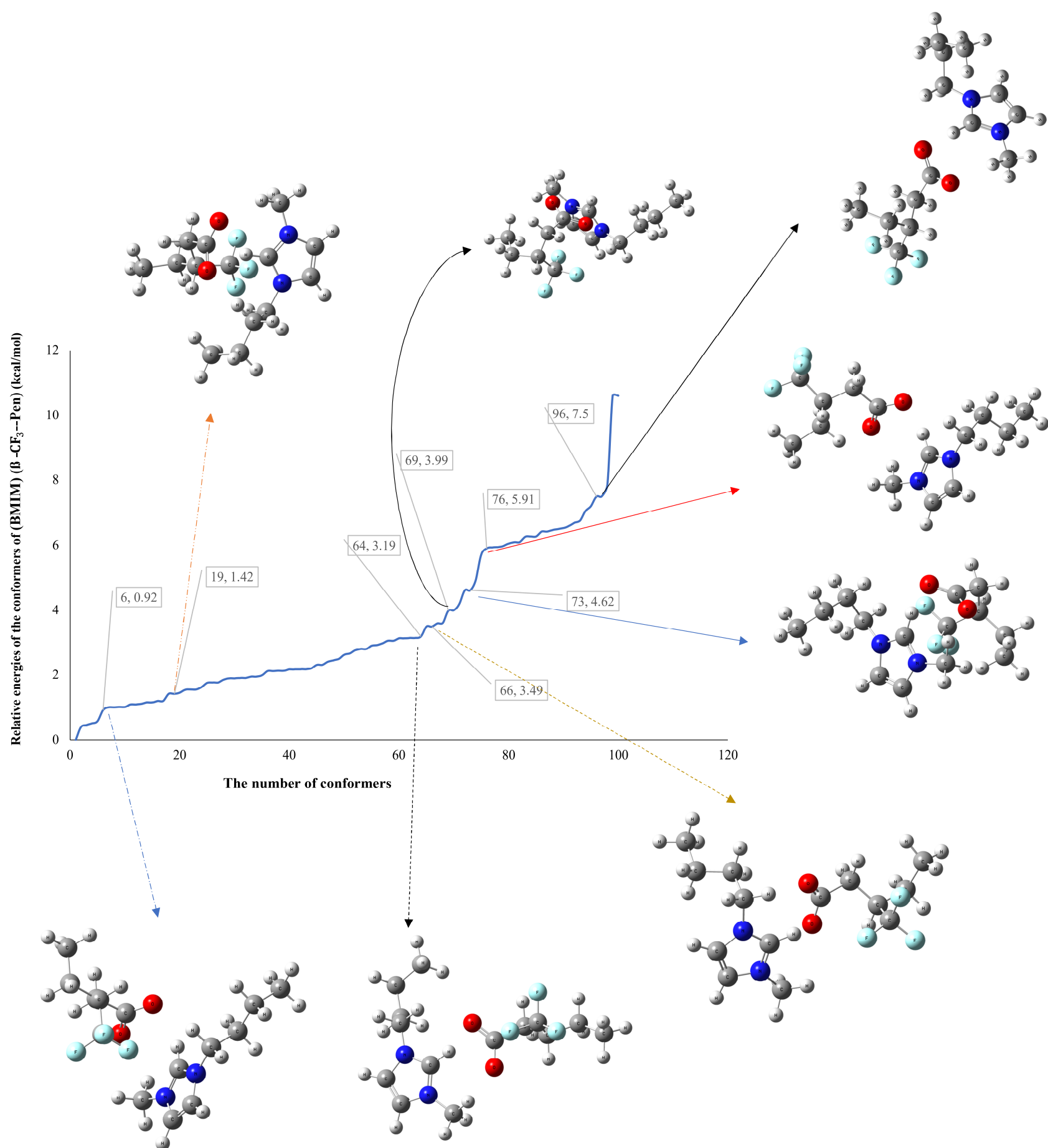


**Figure S10.** Relative energies of the conformers of (BMIM) ( $\beta$ ,  $\delta$ ,  $\sigma$ -Tri-OH-Hep) with respect to the most stable conformer





**Figure S11.** Relative energies of the conformers of (BMIM) ( $\alpha$ -CF<sub>3</sub>-Pen) with respect to the most stable conformer



**Figure S12.** Relative energies of the conformers of (BMIM)( $\beta$ -CF<sub>3</sub>-Pen) with respect to the most stable conformer