

Supplementary Materials for:

Preliminary Free Energy Map of Prebiotic Compounds formed from CO₂, H₂ and H₂S

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Part 1: Reaction schemes to form other dithiopentoses

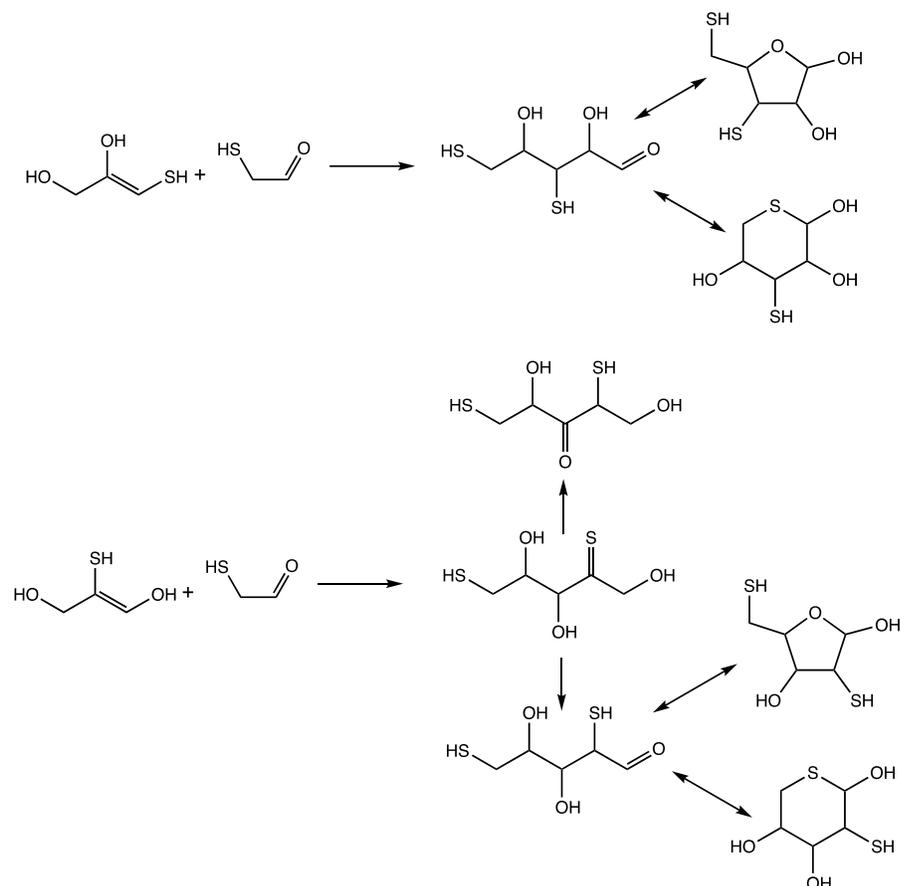


Figure S1a. C₃ enol + C₂ aldehyde aldol additions to form dithiopentoses

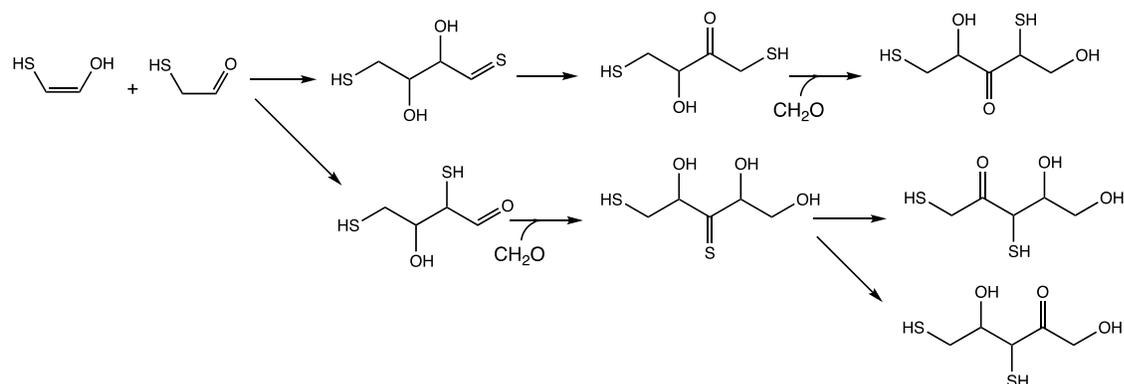


Figure S1b. Mercaptoaldehyde aldol dimerization followed by addition of CH₂O to form dithiopentoses

Part 2: G_{r0} values for zero-oxidation dehydrated C_3 compounds and its analogs.

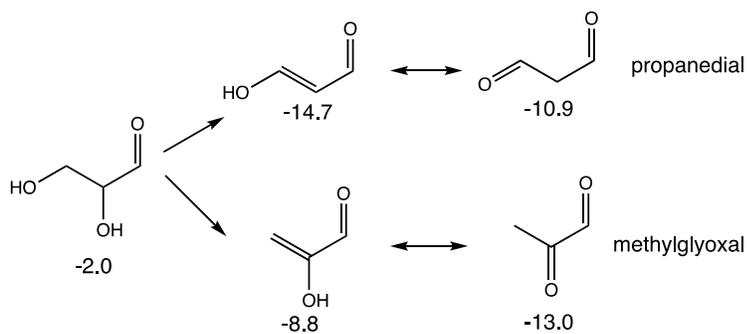


Figure S2a. Dehydration of glyceraldehyde to propanedial and methylglyoxal (G_{r0} in kcal/mol)

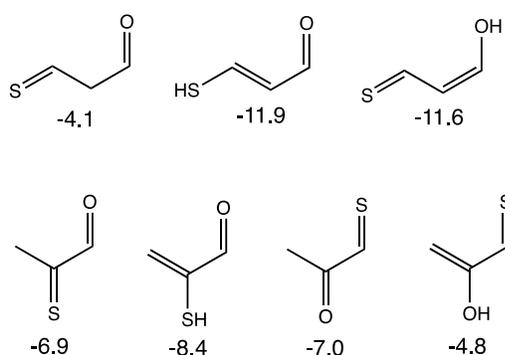


Figure S2b. Sulfur analogs of the dehydrated C_3 compounds (G_{r0} in kcal/mol)

Part 3: Additional Transition State Structures

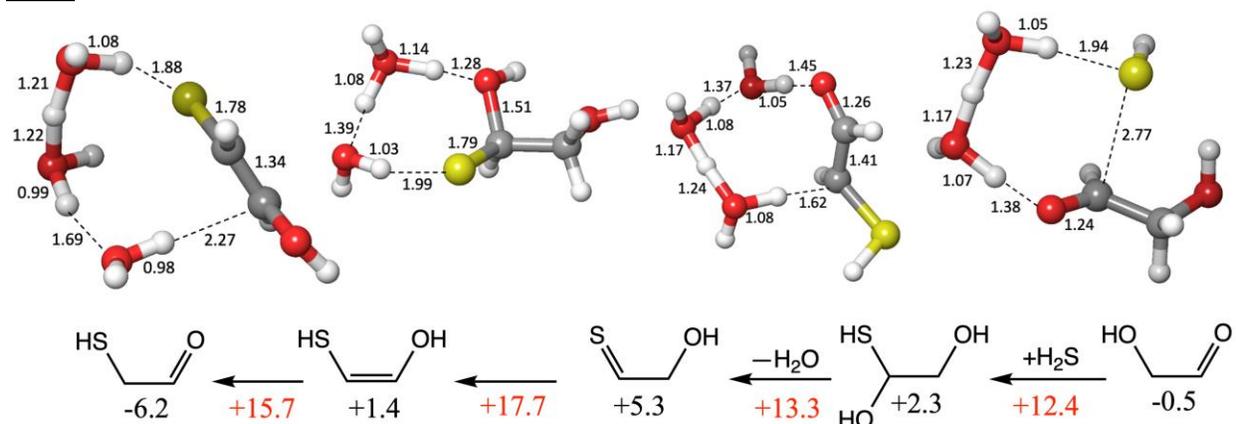


Figure S3. Transition State structures for conversion of glycolaldehyde to mercaptoacetaldehyde