**Table S3.** Relative energies and Boltzmann populations of stable conformers of galactose.

|  |  |  |
| --- | --- | --- |
| **Entry No.** | **Δ*E*** **(kcal/mol)** | **Population 1** |
| 1 | 0.00 | 1.000 |
| 2 | 0.73 | 0.290 |
| 3 | 1.33 | 0.107 |
| 4 | 1.47 | 0.083 |
| 5 | 1.55 | 0.073 |
| 6 | 2.70 | 0.010 |

1 Relative population is calculated by the Boltzmann distribution at a temperature of 298 K.