**S1 Table.** Parameters used to configure the Genetic Algorithm with in the MABE framework.

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| --- | --- | --- |
| **Category** | **Setting** | **Value** |
| **Genome setup** | Type | Circular |
| Alphabet Size | 256 |
| Sites Type | char |
| Initial Size | 5,000 |
| Mutation Point Rate | 0.005 |
| Mutation Copy/Delete Rate | 0.00002 |
| Minimal Mutation Copy/Delete Size | 128 |
| Maximum Mutation Copy/Delete Size | 512 |
| Minimal Size | 2,000 |
| Maximal Size | 20,000 |
| **Markov brain setup** | Type of Gates | Deterministic |
| Range of Inputs/Outputs per Gate | 1 to 4 |
| **Optimizer setup** | Type of Optimizer | Tournament |
| Tournament Size | 5 |
| Population Size | 100 |
| Elitism | No |
| Number of Parents | 1 (no crossover) |