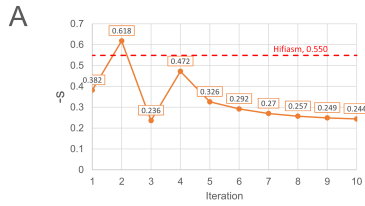
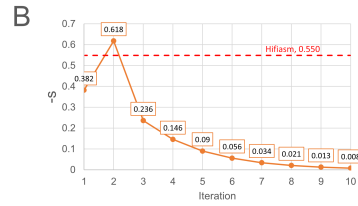


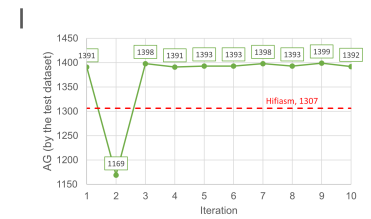
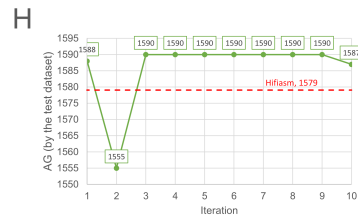
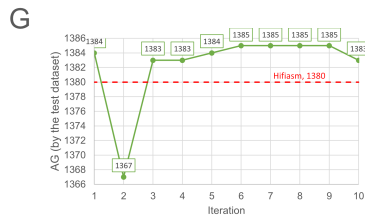
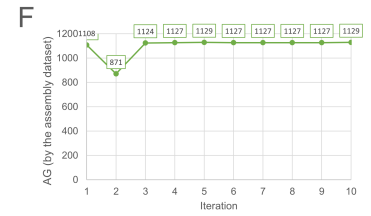
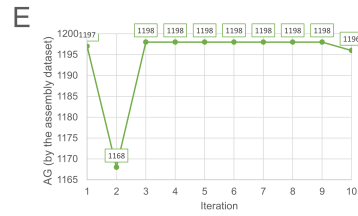
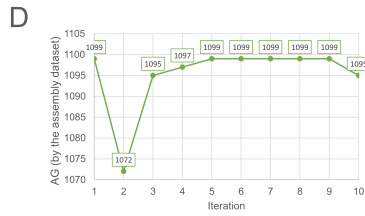
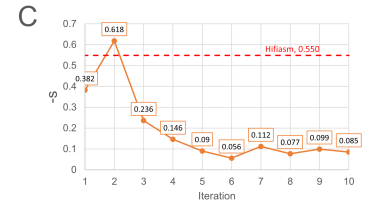
### *Trifolium pratense*



### *Manihot esculenta*



### *Heracleum sosnowskyi*



### Supplementary Figure S1.

Values of "-s" tried by Mabs-hifiasm during 10 iterations of the golden section search: **A** for *Trifolium pratense*, **B** for *Manihot esculenta*, **C** for *Heracleum sosnowskyi*. The red line denotes the default value of "-s" used by Hifiasm.

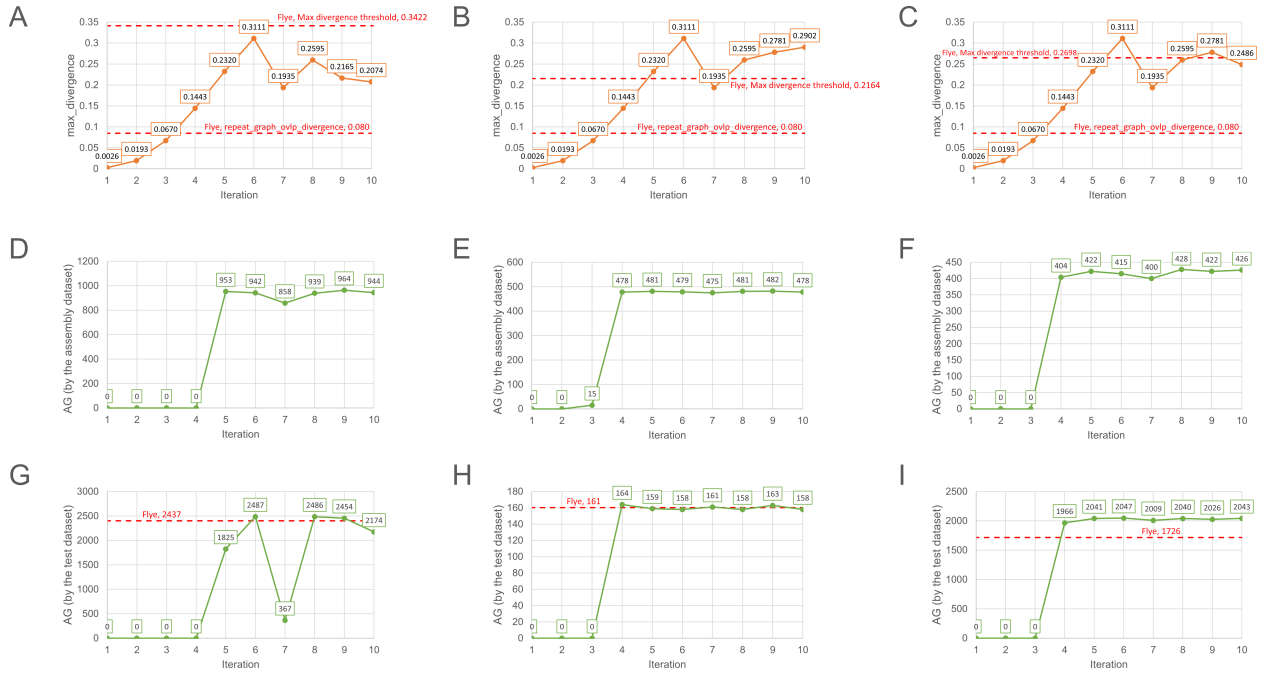
AG achieved by Mabs-hifiasm on the assembly dataset (the fourth column in Table 4): **D** for *Trifolium pratense*, **E** for *Manihot esculenta*, **F** for *Heracleum sosnowskyi*.

AG achieved by Mabs-hifiasm on the test dataset (the fifth column in Table 4): **G** for *Trifolium pratense*, **H** for *Manihot esculenta*, **I** for *Heracleum sosnowskyi*. The red line denotes the AG in the assemblies made by Hifiasm without parameter optimization.

### *Myripristis murdjan*

### *Adineta vaga*

### *Mytilus coruscus*



### Supplementary Figure S2.

Values of "max\_divergence" tried by Mabs-flye during 10 iterations of the golden section search: **A** for *Myripristis murdjan*, **B** for *Adineta vaga*, **C** for *Mytilus coruscus*. Two red lines denote values of "repeat\_graph\_ovlp\_divergence" and "Max divergence threshold" used by Flye; in Mabs-flye these two parameters are equal to each other and called "max\_divergence".

AG achieved by Mabs-flye on the assembly dataset (the fourth column in Table 4): **D** for *Myripristis murdjan*, **E** for *Adineta vaga*, **F** for *Mytilus coruscus*.

AG achieved by Mabs-flye on the test dataset (the fifth column in Table 4): **G** for *Myripristis murdjan*, **H** for *Adineta vaga*, **I** for *Mytilus coruscus*. The red line denotes the AG in the assemblies made by Flye without parameter optimization.