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Supporting Information for

# Biochemical characterization and biocatalytic application of a novel D-tagatose 3-epimerase from *Sinorhizobium sp.*

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**Table S1. Primers used for the construction of recombinant sDTE.**

| Primer name | Sequence of primer |
|---|---|
| M9A_F | CCGGTGGGTCTGATTAGT**GCG**CAGTACGCCCGC |
| M9A_R | GCGGGCGTACTG**CGC**ACTAATCAGACCCACCGG |
| R65G_F | GTTGTTCTGGCAGCC**GGT**GTGAACCTGCAAC |
| R65G_R | GTTGCAGGTTCAC**ACC**GGCTGCCAGAACAAC |

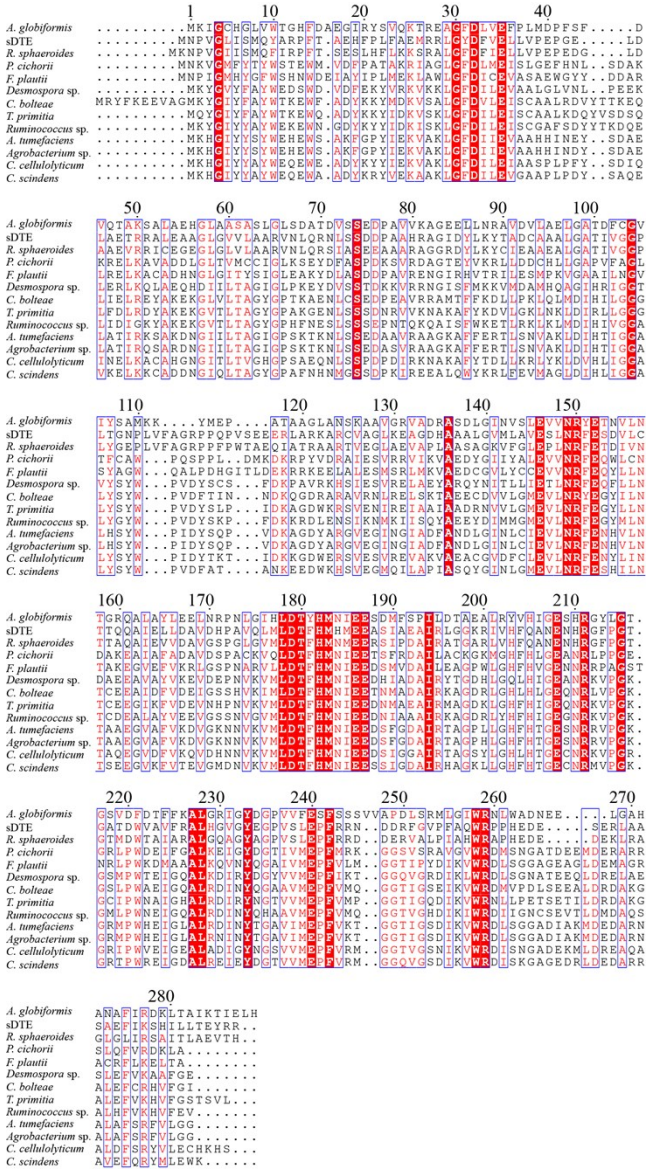


**Figure S1** Amino acid sequence alignments of D-allulose 3-epimerase and D-tagatose 3-epimerase from different strains.

*A. globiformis*: BAW27657.1; sDTE: WP_069063284.1; *R. sphaeroides:* ACO59490.1; *P. cichorii*: BAA24429.1; *F. plautii*: EHM40452.1; *Desmospora sp.*: WP_009711885.1; *C. bolteae*: EDP19602.1; *T. primitia*: ZP_09717154.1; *Ruminococcus* sp.: ZP_04858451.1; *A. tumefaciens*: AAK88700.1; *Agrobacterium* sp.: EGL65884.1; *C. cellulolyticum*: ACL75304.1; *C. scindens*: EDS06411.1.

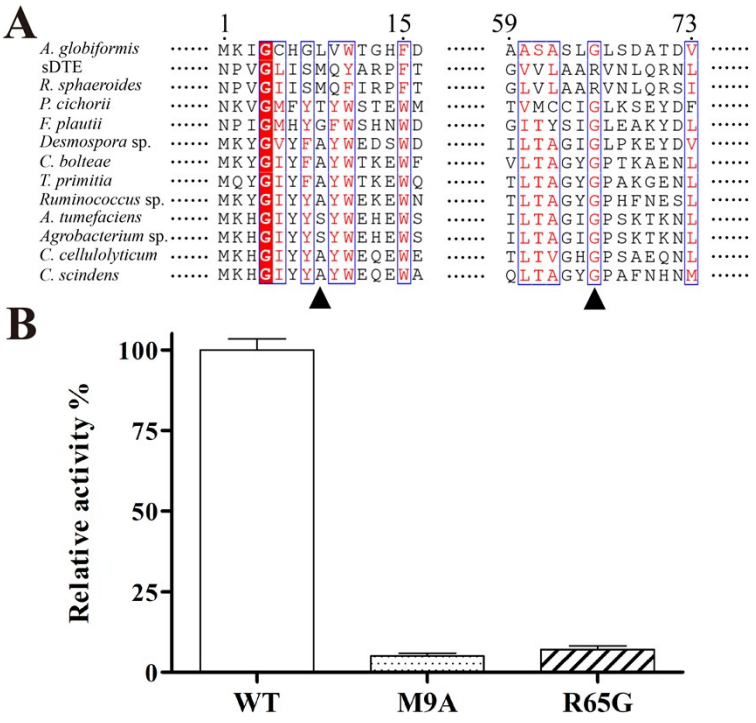


**Figure S2** (A) Sequence alignment of sDTE with other DTE/DAE family enzymes. (B) The relative catalytic activity of sDTE mutants toward D-fructose.