Fig. S1. Effects of (A) substrate and (B) enzyme concentrations on the production of aglycon protopanaxatriol (APPT) from ginsenoside Re as a substrate using *Dictyoglomus turgidum* β-glycosidase (DT-bgl) combined with *Pyrococcus furiosus* β-glycosidase (PF-bgl).
**Fig. S2.** High-performance liquid chromatography (HPLC) profiles during the conversion of ginsenoside Re to aglycon protopanaxatriol (APPT) using *Dictyoglomus turgidum* β-glycosidase (DT-bgl) supplemented with *Pyrococcus furiosus* β-glycosidase (PF-bgl).

(A) 0 h. The ginsenoside Re peak represents a single substrate. (B) 2 h. The ginsenoside Rh1, Rg2, and APPT peaks represent two intermediates and a product, respectively. (C) 4 h. The APPT peak represents a single product.
Fig. S3. Effects of (A) substrate and (B) enzyme concentrations on the biotransformation of protopanaxatriol (PPT)-type ginsenosides in Panax ginseng leaf extract as a substrate to aglycon protopanaxatriol (APPT).
Fig. S4. High-performance liquid chromatography (HPLC) profiles during the conversion of protopanaxatriol (PPT)-type ginsenosides in Panax ginseng leaf extract to aglycon protopanaxatriol (APPT) using Dictyoglomus turgidum β-glycosidase (DT-bgl) supplemented with Pyrococcus furiosus β-glycosidase (PF-bgl).

(A) 0 h. The ginsenoside Re, Rg1, Rf and F1 peaks represent the substrates. (B) 6 h. The ginsenoside Rh1 and APPT peaks represent the intermediate and the product, respectively. (C) 11 h. The APPT peak represent the single product.