



**Supplementary Information, Figure S9.** The *in vitro* reaction using the mixed substrate of PPD, Rh2 and Rg3 catalyzed by UGTPg1.

**A**, HPLC analysis for the products collected in time course of *in vitro* reactions of PPD, Rh2 and Rg3 catalyzed by UGTPg1. The products (CK, F2 and Rd) correspond to the substrates (PPD, Rh2 and Rg3). PPD 12 h, Rh2 12 h and Rg3 12 h represent incubating UGTPg1 with PPD (0.5 mM), Rh2 (0.5 mM) and Rg3 (0.5 mM) for 24 hours, respectively; other colors, incubating UGTPg1 with the mixed PPD (0.5 mM), Rh2 (0.5 mM) and Rg3 (0.5 mM) for 0 hour, 0.25 hour, 0.5 hour, 1 hour, 2 hours and 12 hours. **B**, the quantification of the products collected in time course of *in vitro* reactions.