**Figure S1.** Enzyme kinetics of RgDAAO by a peroxidase-coupled enzymatic assay. Conditions: 75 mM phosphate buffer (pH 8.5), 1 mM o-dianisidine, 1 U HRP, UAA (indicated concentrations) and RgDAAO (11.9 nM for NPA and 119 nM for BPA and HQA) at 25 °C.
Figure S2. TtAT activity for BPA (left) and HQA (right). Conditions: 50 mM HEPES-NaOH (pH 8.0), 0.1 M KCl, UAA (indicated concentrations), and 20 μM TtAT. The reaction mixture was incubated at 25 °C for 5 min, and absorbance was measured at 430 nm.

Figure S3. LC-MS characterization of the reaction products of racemic BPA (A) and HQA (B) by RgDAAO. LC traces (280 nm for BPA and 254 nm for HQA) and MS spectra for each peak are shown.
Figure S4. LC-MS characterization of the reaction products of racemic BPA (A) and HQA (B) by the coupled reaction of RgDAAO and TtAT. LC traces (280 nm for BPA and 254 nm for HQA) and MS spectra for each peak are shown.