

The stilbene compound resveratrol was glycosylated to give its 4-O- β -D-glucoside as the major product in addition to its 3-O- β -D-glucoside by a plant glucosyltransferase from *Phytolacca americana* expressed in recombinant *Escherichia coli*. This enzyme transformed pterostilbene to its 4-O- β -D-glucoside, and converted pinostilbene to its 4-O- β -D-glucoside as a major product and its 3-O- β -D-glucoside as a minor product. An analysis of antioxidant capacity showed that the above stilbene glycosides had lower oxygen radical absorbance capacity (ORAC) values than those of the corresponding stilbene aglycones. The 3-O- β -D-glucoside of resveratrol showed the highest ORAC value among the stilbene glycosides tested, and pinostilbene had the highest value among the stilbene compounds. The tyrosinase inhibitory activities of the stilbene aglycones were improved by glycosylation; the stilbene glycosides had higher activities than the stilbene aglycones. Resveratrol 3-O- β -D-glucoside had the highest tyrosinase inhibitory activity among the stilbene compounds tested.

Synthesis and evaluation of stilbene glucosides.

