Ultraviolet-absorbing chemicals are useful in cosmetics and skin care to prevent UV-induced skin damage. We demonstrate here that heterologous production of shinorine, which shows broad absorption maxima in the UV-A and UV-B region. A shinorine producing *Corynebacterium glutamicum* strain was constructed by expressing four genes from *Actinosynnema mirum* DSM 43827, which are responsible for the biosynthesis of shinorine from sedoheptulose-7-phosphate in the pentose phosphate pathway. Deletion of transaldolase encoding gene improved shinorine production by 5.2-fold. Among the other genes in pentose phosphate pathway, overexpression of 6-phosphogluconate dehydrogenase encoding gene further increased shinorine production by 60% (19.1 mg/L). The genetic engineering of the pentose phosphate pathway in *C. glutamicum* improved shinorine production by 8.3-fold in total, and could be applied to produce the other chemicals derived from sedoheptulose-7-phosphate.