

Antimelanogenesis activity of polyphenol glycoside synthesized by transglycosylation reaction of cgtase from xanthomonas campestris

Abstract

Xanthomonas campestris is known as xanthan gum biopolymer producing bacteria, which is useful as thickener, stabilizer, and suspending agent in the food industry. The mechanism of the synthesis of xanthan gum is thought to involve enzymatic metabolism is quite complex, so that research on that existence of enzymes that play a role in the synthesis of biopolymer is important to expose. This study, aimed to test the ability of X. campestris culture that has transglycosylation activity as a producer of cyclodextrin glucanotransferase (CGTase) on acceptor of resorcinol and corn flour as its substrate to produce polyphenol glycosides as transfer products that may have antimelanogenesis activity. Reaction products were analyzed by thin layer chromatography. The study was focused to test and to purify polyphenol glycoside using ODS column chromatography eluted with methanol and 1% formic acid as gradient eluent. Result showed that the polyphenol glycoside, arbutin, and resorcinol at a concentration of 5 mM had potentially inhibitory effect that suppressed against activity of enzyme tyrosinase that might be presumably playing a role in the synthesis of melanin in a mechanism of melanogenesis, amount to 10.57%, 5.69%, 13.90%, respectively.