

Melanin Decolorization Effect of Glutathione Peroxidase (GPX) in Lysosome-related Organelle Extract (LOE) Isolated from *S. cerevisiae*

전경찬, 윤지희¹, 민지호^{1,†}, 김양훈²

전북대학교 반도체, 화학공학부; ¹전북대학교; ²충북대학교

(jihomin@jbnu.ac.kr[†])

Melanin compounds have a function to protect skin by harmful ultraviolet ray, but too much synthesis of them can make the skin dark and unclean, and lead to hyperpigmentation such as a melanism. In previous research, we found a melanin color reduction effect of lysosome-related Organelle Extract (LOE) from *S. cerevisiae* and that the melanin color reduction effect was related to peroxidase activity of LOE. In this study, melanin color reduction effect of Glutathione Peroxidase (GPX), a peroxidase in peroxisome, was confirmed and *S. cerevisiae* was constructed to highly express GPX protein tagged with green fluorescence protein. LOE isolated from the clone was more effective to reduce melanin color than wild type. These results provide insights into the regulation of GPX and LOE from *S. cerevisiae* as new cosmetic materials to reduce the color intensity of melanin.

This research was supported by the Ministry of Trade, Industry & Energy(MOTIE), Korea Institute for Advancement of Technology(KIAT) through the Encouragement Program (P0006145) for The Industries of Economic Cooperation Region