Evaluated Effect of Enzymes from Lysosomes and Peroxisomes as Functional Organelles to Decrease Quantities of Melanin

박동준, 윤지희, 민지호*
전북대학교
(jihomin@jbnu.ac.kr*)

Lysosomes and peroxisomes are known as significant organelles having a various of functions in all eukaryotic cells. Lysosomes contain enzymes as lysozyme to degradate diverse molecules came from outside of the cells. Meanwhile, peroxisomes also contain enzymes such as catalase that convert hydrogen peroxide(H2O2) to water and oxygen, in other words neutralizing the toxicity. In our study, we found that the reducing effect of melanin by lysosomal and peroxisomal enzymes could be enhanced through the cellular activation of lysosomes and peroxisomes by pretreatment of melanin. We have shown increased superficial intensity and peroxidase activity of lysosomes after extracting enzymes from lysosomes and peroxisomes. In addition, we found that activated lysosomes and peroxisomes were related with reactive oxygen species production in cells. Besides, we evaluated that enzymes in HeLa cells cultured melanin environment are more effective to decrease melanin. It means the eukarytic cells are able to decrease melanin in mammalian cells without other chemicals. Therefore this experiment can show to find mechanism for in vivo funtion for treating melanin.