

Influence of lysine on TiO_2 mineralization

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Biom mineralization is an eco-friendly method producing a variety of minerals. Recently, this technique has been applied to prepare engineering materials with catalysis and conduction property. Titanium dioxide (TiO_2) is one of the well-known metal oxide for pigment and photocatalyst. Titanium(IV) bis(ammonium lactato)dihydroxide (TALH), the titanium source, can be mineralized by the lysine-rich proteins or peptides. However, it has not been clearly discovered that how the lysine mineralize the TALH. In addition, the effect of lysine numbers on mineralization should be identified. In this study, influence of lysine on the mineralization of TiO_2 was investigated. Oligo (L-lysine) with various numbers of lysine was used for the in vitro mineralization of titanium dioxide. Observation of the TALH reaction using a UV-vis spectroscopy revealed the influence of lysine numbers on the mineralization. The outcomes of this study would provide insight on the biom mineralization of abiological substances.