

# **Effect of 5-aminolevulinic acid-mediated photodynamic therapy on MCF-7 and MCF-7/ADR cells**

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## **Abstract**

This investigation studies how nano-( $\text{-TiH}$ ,  $\text{-TiH}_2$ , and  $\text{-TiH}_{1.971}$ ) phases affect the formation of multi-nano-titania film by anodization and cathodic pretreatment. Nano-titanium hydrides and substoichiometric nano-titanium hydrides were formed during cathodization. A multi-nanoporous titania film was formed on the titanium during anodization. The nanohydrides are directly transformed to multi-nanoporous titania film by dissolution following anodization. Anodization with cathodic pretreatment not only yields a titanium surface with a multi-nanostructure, but also transforms the titanium surface into a nanostructured titania surface. Formation of nanohydrides by cathodization and oxidation by anodization are believed to promote biocompatibility and improve bone-to-interface contact, accelerating initial osseointegration and re-osseointegration.