Novel Osteoblast-Lineage Specific Cell-Surface Antigen Possibly Regulating Bone Remodeling and Hard Tissue Regeneration

タメール アブデルハイド アハメッド アブデルファッタ アハメッド バダウェイ

（様式６－２）

氏　　名	TAMER ABDELHADY AHMED ABDELFATTAH AHMED BADAWY
論　文　名	Novel Osteoblast-Lineage Specific Cell-Surface Antigen Possibly Regulating Bone Remodeling and Hard Tissue Regeneration （骨改造と硬組織再生を制御する新規骨芽細胞特異的細胞表面抗原に関する研究）
論文調査委員	主　査　　九州大学　　教授　　自見　英治郎 副　査　　九州大学　　教授　　清島　保 副　査　　九州大学　　教授　　前田　英史

論　文　審　査　の　結　果　の　要　旨

Bone remodeling consists of bone resorption by osteoclasts and bone formation by osteoblasts and is important for maintenance of bone mass and calcium homeostasis. Bone resorption and bone formation are tightly coupled, but the molecular mechanism regulating the coupling between bone resorption and bone formation, are still ambiguous. Thus, we hypothesized that osteoblast-specific cell-surface molecules could contribute to the fine modulation of bone remodeling. BALB/c mice were immunized with a clone of the rat osteoblastic cell line ROS17/2.8 and a panel of antibodies was prepared by fusing splenocytes with murine myeloma cell line, P3X63-AG8-U1. After screening and extensive cloning, one hybridoma secreting the monoclonal antibody-A7 (A7 MAb) highly specific to cells in the osteoblast lineage was obtained. A7 antigen was detected approximate molecular weight of 45 KDa and expressed on cell-surface of osteoblasts and osteoblast-like bone marrow stromal cells in vitro, and in a subset of bone surface osteoblasts and in osteocytes in vivo. Cross-linking of cell-surface A7 antigen slightly enhanced osteoclast formation, while marked suppression of calcification in primary osteoblast cultures. A7 antigen was also expressed in mature odontoblasts. Taken together, A7 antigen could be an important molecule involved in the fine regulation of bone remodeling and odontoblast differentiation and dentin regeneration.

以上の内容をもって、本論文は著者らが作製した骨芽細胞の細胞膜表面上の特異的分子を認識するモノクローナル抗体が、破骨細胞による骨吸収と骨基質の石灰化を調節することの新知見を呈している。従って、博士（歯学）の学位授与に値する