



UPPSALA
UNIVERSITET

Molecular Biotechnology Programme

Uppsala University School of Engineering

UPTEC X 04 043	Date of issue 2004-11	
Author Anna Lundquist		
Title (English) Arterial calcification in bone mineralization deficient mice		
Title (Swedish)		
Abstract Calcification of arterial plaques reduces the elasticity of the vessel wall, increases the risk for vessel rupture and is associated with the elevated risk of myocardial infarction and atherosclerosis. Recent studies supports the theory that arterial calcification is in fact an active process that is related with the expression of bone mineralization proteins. In this study we tested the hypothesis that the calcification in aorta is build up by the same process as in bone mineralization by using two animal models of soft tissue ossification, i.e., <i>Enpp1</i> ^{-/-} and mice deficient in the Ankylosis gene (<i>ank/ank</i>). Aortic sections from these mice were stained for calcium and mineral deposits and for bone mineralization markers as osteopontin. Smooth muscles cells from the aortas were isolated and cultured for alkaline phosphatase assays. The histology experiments showed some positive staining for calcium and mineral in <i>ank/ank</i> and severe irregularities in the vessel wall in <i>Enpp1</i> ^{-/-} . Although further experiments must be performed, these data indicated that arterial calcification is associated with bone mineralization process.		
Keywords Arterial calcification, knock-out mice, immunoassay, histology		
Supervisors Jose Luis Millan, PhD The Burnham Institute, San Diego		
Scientific reviewer Kenneth Johnsson, MD, PhD Akademiska sjukhuset, Uppsala		
Project name	Sponsors	
Language English	Security Secret until 2006-01	
ISSN 1401-2138	Classification	
Supplementary bibliographical information	Pages 20	
Biology Education Centre Box 592 S-75124 Uppsala	Biomedical Center Tel +46 (0)18 4710000	Husargatan 3 Uppsala Fax +46 (0)18 555217

