

## **Determination of Heart Cell Type and Subcellular Location of Arginase 2**

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Heart disease is a profound human health problem worldwide and has been the leading cause of death in the United States since 1990. Fifty-four percent of the heart disease problems are due to coronary heart disease. In 2003, about 3.5 % of the United States population, or 4.2 million men and 3 million women, suffered an acute myocardial infarction (American Heart Association, 2006). In an effort to understand the early responses in the heart to an acute myocardial infarction (AMI), a microarray study was performed and the arginine-nitric oxide-polyamine pathway was highly up-regulated (Harpster et al, 2006).

The goal of this project was to determine the cell type and subcellular location of arginase 2 (ARG2) an enzyme involved in the metabolism of L-arginine and up-regulated during a heart attack. Western blotting was used to confirm ARG2 showed an induction following AMI. In addition, immunohistochemistry was used to determine the cell type and intercellular location of ARG2. ARG2 is predicted by sequence analysis to localize to the mitochondria. Multiple experiments were done to label ARG2 via immunohistochemistry. The images showed moderate background and no clean signal. Although suitable for western blot analysis, this particular ARG2 antibody was not suitable for immunohistochemistry.