

Changes in Liver Gene Expression of *Azin1* Knock-out Mice

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Z. Naturforsch. **65c**, 519–527 (2010); received January 5/March 3, 2010

The ornithine decarboxylase antizyme inhibitor (AZI) was discovered as a protein that binds to the regulatory protein antizyme and inhibits the ability of antizyme to interact with the enzyme ornithine decarboxylase (ODC). Several studies showed that the AZI protein is important for cell growth *in vitro*. However, the function of this gene *in vivo* remained unclear. In our study, we analyzed the transcriptional profiles of livers on the 19th day of pregnancy of *Azin1* knock-out mice and wild-type mice using the Agilent oligonucleotide array. Compared to the wild-type mice, in the liver of *Azin1* knock-out mice 1812 upregulated genes (fold change ≥ 2) and 1466 downregulated genes (fold change ≤ 0.5) were showed in the microarray data. Altered genes were then assigned to functional categories and mapped to signaling pathways. These genes have functions such as regulation of the metabolism, transcription and translation, polyamine biosynthesis, embryonic morphogenesis, regulation of cell cycle and proliferation signal transduction cascades, immune response and apoptosis. Real-time PCR was used to confirm the differential expression of some selected genes. Overall, our study provides novel understanding of the biological functions of AZI *in vivo*.

Key words: Microarray, *Azin1* Knock-out Mice, Ornithine Decarboxylase