Functional Analysis of ZFAT through Specific siRNA against ZFAT in Ba/F3 Cell Line

Midori KOYANAGI, Keiko DOI, Takahiro FUJIMOTO,
Toshiyuki TSUNODA, Yasuo TAKASHIMA and Senji SHIRASAWA

Department of Cell Biology, Faculty of Medicine, Fukuoka University

Abstract : The ZFAT (zinc-finger gene in autoimmune thyroid disease susceptibility region) gene encodes a transcription-related protein containing one AT hook and 18 C2H2 zinc finger domains. ZFAT is highly conserved among ZFAT orthologues from fish to mammalian species and is mainly expressed in B and T lymphocytes. We previously reported that ZFAT is involved in the regulation of the expressions of immune-related genes through the analysis of overexpression of ZFAT in mouse Ba/F3 cell line. In this study, we have analyzed the function of ZFAT through the down-regulation of ZFAT using specific siRNA (short interfering RNA) against ZFAT in Ba/F3 cells, showing that ZFAT regulates the expressions of genes involved in growth, differentiation and cell-cell adhesion. These results suggested that ZFAT plays critical roles not only in immune-related genes but also in the regulation of growth- and differentiation-related genes.

Key words : ZFAT, siRNA, Expression Array Analysis, Gene Ontology