Insulin is a hormone produced by the β-cells of the endocrine pancreas that plays an essential role in blood glucose homeostasis by signaling the uptake of glucose by peripheral tissues to be used for energy or stored as fat. Impairment of the insulin response underlies the development of diabetes *mellitus*. The transcription factor, Gli-similar 3 (Glis3) is important during the development of the endocrine pancreas and plays additional roles as a transcriptional activator of the insulin gene in the mature organ. Multiple pathologies have been linked to mutations within the *GLIS3* locus in humans, including type 1 and type 2 diabetes. Although previous research suggests that Glis3 plays a significant role in the specification of β cells during pancreatic development, the spatio-temporal expression pattern of Glis3, its target genes, and its interacting partners remain enigmatic. The zebrafish (*Danio rerio*) has emerged as a valuable model organism to study development, largely because of its rapid external development and transparent embryos. In order to visualize the glis3 protein during development, a transgenic zebrafish line is being engineered using the CRISPR/Cas9 system to produce fish that express a chimeric protein consisting of glis3 fused in-frame to enhanced green fluorescent protein (EGFP). This line will provide a better understanding of glis3 expression throughout development and can serve as a tool for future experiments to identify glis3 target genes, protein-protein interactions, and characterize molecular mechanisms that could aid in identifying therapeutic targets for the treatment of Glis3-associated diseases.