## Results

### Efficient Splicing and Translation of Microinjected t-ftz RNA

To study the nuclear export of mRNA coding for a secretory protein, we used a model mRNA that is derived from a fragment of the *fushi tarazu* (*ftz*) gene. The original construct contains an intron and was previously used to monitor mRNA splicing and nuclear export in *Xenopus* oocytes [1,34]. The construct was modified by adding a Kozak consensus sequence to allow efficient expression in mammalian cells. Sequences encoding FLAG and hemagglutinin (HA) epitopes were included at the 5′ and 3′ ends of the open reading frame (ORF), respectively, to monitor translation of the mRNA. Because the intron contains in-frame stop codons (Figure 1A; asterisks), the HA epitope will only be synthesized if the mRNA is spliced. To target the translation product to the ER, we attached an SSCR derived from the mouse major histocompatibility complex (MHC) class 2 molecule H2-K1. The final construct is called t-ftz-i (Figure 1A and Figure S1).