Towards water-free biobanks: long-term dry-preservation at room temperature of desiccation-sensitive enzyme luciferase in air-dried insect cells

Short title: Enzyme preservation at room temperature in air-dried insect cells

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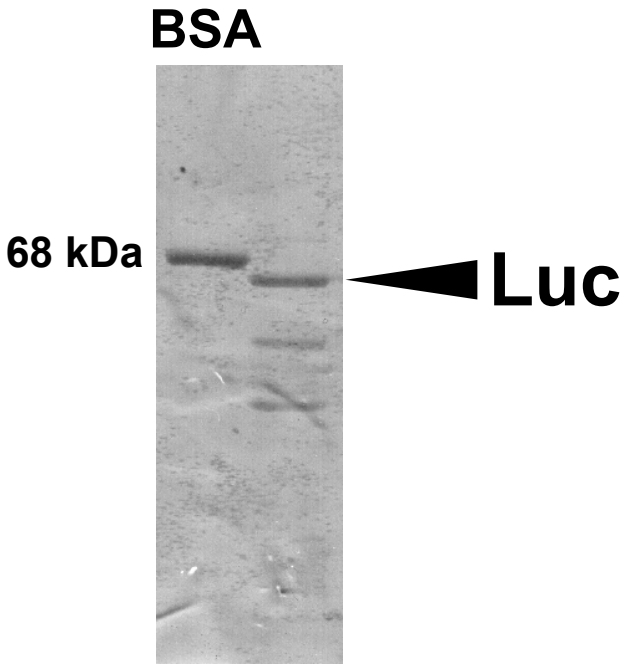

Figure S1
Recombinant luciferase obtained from *E. coli*. The samples were denatured at 95°C in SDS-PAGE sample buffer, the lysates were subjected to SDS-PAGE with 10% acrylamide gels, and separated proteins were stained with Coomassie brilliant blue. Arrowhead shows luciferase (Luc). BSA was used as a positive control.

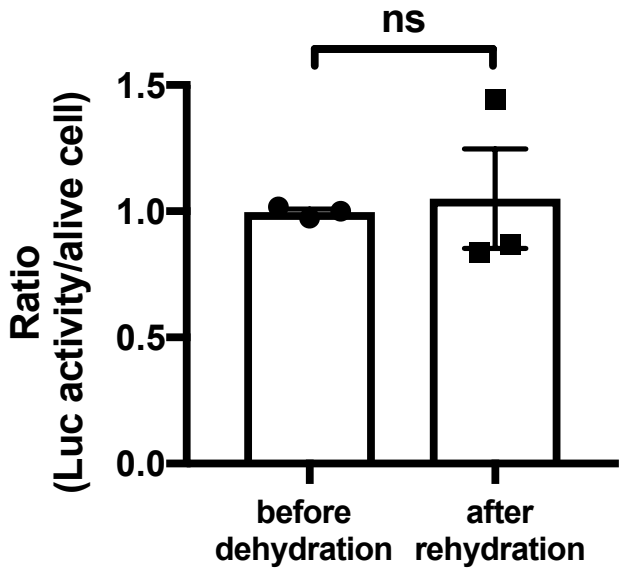

Figure S2
Luciferase activity per surviving cell by the ratio after rehydration. Survival of Pv11-Luc cells was examined using the calcein staining. Cell counting was performed after pre incubation with 600 mM trehalose and 1 h after rehydration. Each value is shown as a scatter dot plot. Error bar shows standard error of mean (n = 3). Statistical significance was evaluated with Mann-Whitney *U* test ($p = 0.35$).

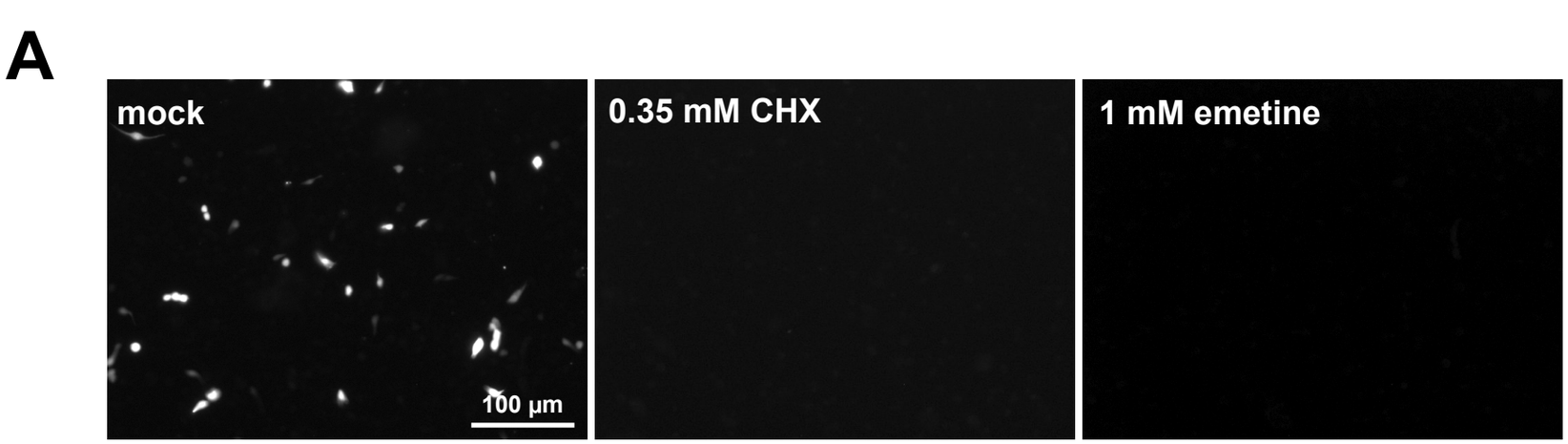

Figure S3

The effective concentration range of translation inhibitors for Pv11 cells was determined using the transient gene expression system. AcGFP1 fluorescence was observed at 48 h after transfection into Pv11 cells. Each translation inhibitor in different concentrations was added into the culture medium after transfection to Pv11 cells. **A**. AcGFP1 fluorescence imaging. Mock shows the AcGFP1 fluorescence without inhibitor. **B**. Fluorescence intensity of AcGFP1 in randomly picked-up individual cells was measured 48 h after transfection, and is shown as a scatter dot plot. Error bar shows standard error of mean (n = 9–10). Statistical significance was calculated by using one-way ANOVA and Tukey's multiple comparison test as a post hoc analysis ("****" means significantly different $p < 0.0001$; "**" means $p = 0.002$ for cycloheximide; $p = 0.004$ for emetine; "ns" means not significantly different).