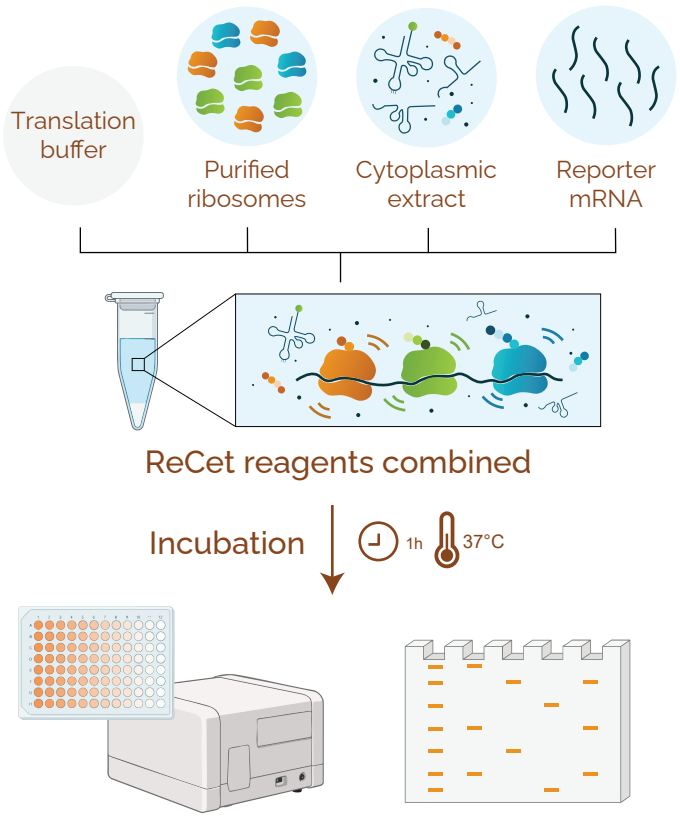
ReCet kit

Reconstituted Cell-free translation system

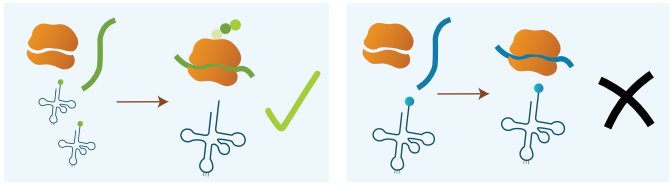
Introducing ReCet, our tripartite reconstituted cell-free translation system. By combining purified ribosomes, ribosome-depleted cytoplasm and mRNA, you can now simulate an *in vitro* translation reaction. This allows you to study cellular stress events, ribosome heterogeneity or translational inhibitor drugs, among others. Choose your cell line model from our catalogue or request a new system – we can set it up for you!

1 ReCet workflow

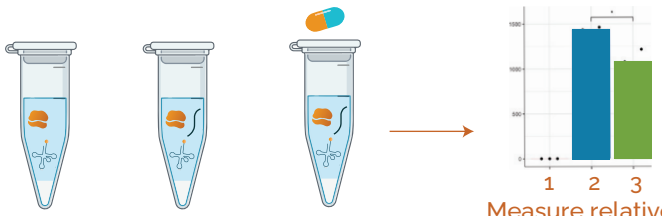


2 ReCet applications

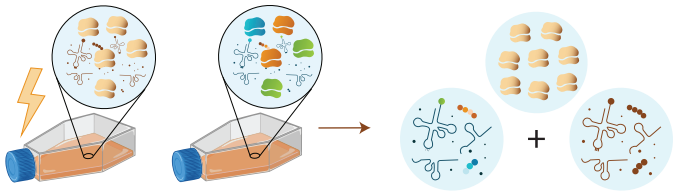
a. Screening of mRNA drugs



b. Translational inhibitor drug discovery



c. Mechanisms of cellular stress



Specifications

Cell lines available	Kit size	Catalogue number
HEK, CHO, custom (on request)	30 rxns	#RC30-HEK #RC30-CHO #RC30-XXXX (custom)

Proof-of-concept studies

ReCet accurately depicts translation *in vitro*

Our ReCet system is engineered to deliver higher, more stable protein signals than other available protocols—achieving greater translation efficiency compared to traditional methods. Beyond sheer performance, ReCet also captures the true biology of translation regulation: it faithfully reproduces efficiency differences driven by mRNA regulatory regions (UTRs), giving you deeper insights into gene expression control.

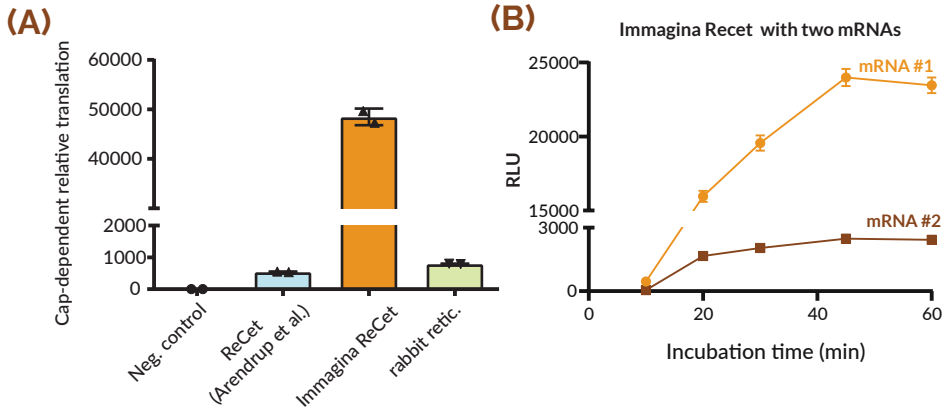
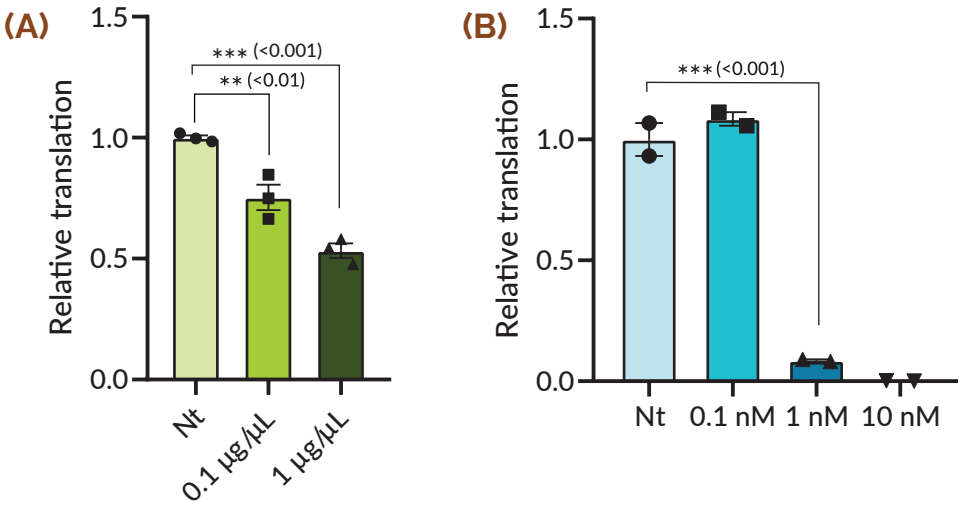


Figure 1
(A) Comparison of Immagina ReCet with the Tripartite cell-free system [1] and rabbit reticulocyte protocols, using capped Firefly luciferase mRNA.
(B) ReCet reactions with two Firefly luciferase mRNAs sharing the same CDS but different UTRs, highlighting UTR-dependent translation efficiency.

[1] Arendrup, F. S., Andersen, K. L., & Lund, A. H. (2025). A tripartite cell-free translation system to study Mammalian Translation. Nature Protocols.

Case study: translation inhibitor drugs



With ReCet, you can easily study how drugs affect translation. Treatments can be applied directly to individual components (ribosomes, cytoplasm, RNA) before assembly or to the fully reconstituted system — giving you unmatched flexibility.

Figure 2 shows the effect of cycloheximide **(A)** and puromycin **(B)**, two well-known translation inhibitors [2,3]. The results demonstrate a clear dose-dependent reduction in protein synthesis, highlighting ReCet's precision and reliability for drug-testing applications. Data are mean ± SD statistical test: one-way ANOVA.

Highlights

Cell type specific
Study translation in a more physiologically relevant context (mammalian system)

Flexible
With ribosomes, cytoplasmic extract and target RNA, mix and match as needed

Robust
Stable protein signal over time

Scalable
Easily adaptable for high-throughput, 96-well plate screening

[2] Schneider-Poetsch, T., Ju, J., Eyler, D. E., Dang, Y., Bhat, S., Merrick, W. C., Green, R., Shen, B., & Liu, J. O. (2010). Inhibition of eukaryotic translation elongation by cycloheximide and lactimidomycin. Nature Chemical Biology.
[3] Aviner, R. (2020). The science of puromycin: From studies of ribosome function to applications in biotechnology. Computational and Structural Biotechnology Journal.

Imagine what you can discover. Immagina.