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Rebuilt cell-free system (PUREfrex[®]); beyond cell, beyond life



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23-25 May 2023



GeneFrontier

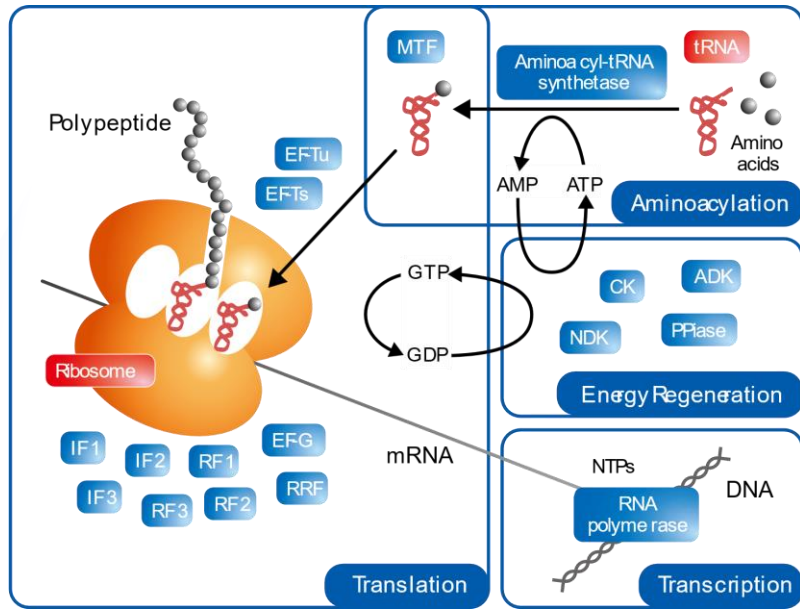
-Customize expression toolbox for your research-

Only necessary molecules
for transcription/translation

Versatile and Robust
Platform for protein synthesis

Huge potential as
New platform in Biotech industry

Rebuilt cell-free system (or Integrated enzymatic reaction)



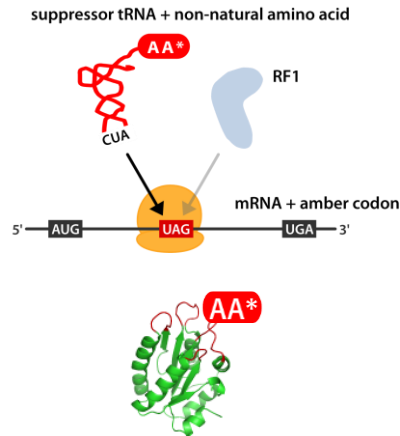
For more information



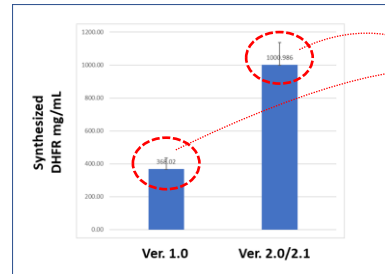
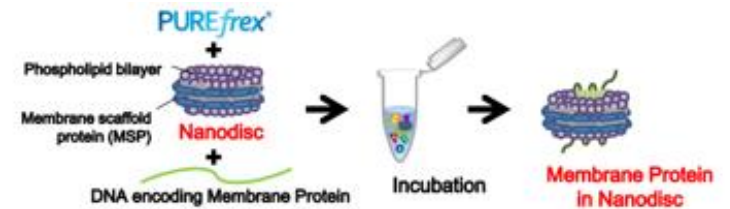
Translation factors
Chaperones
Detergent
Temperature/pH

<For non-natural AA>

Translation - RF1



<For difficult to express protein>



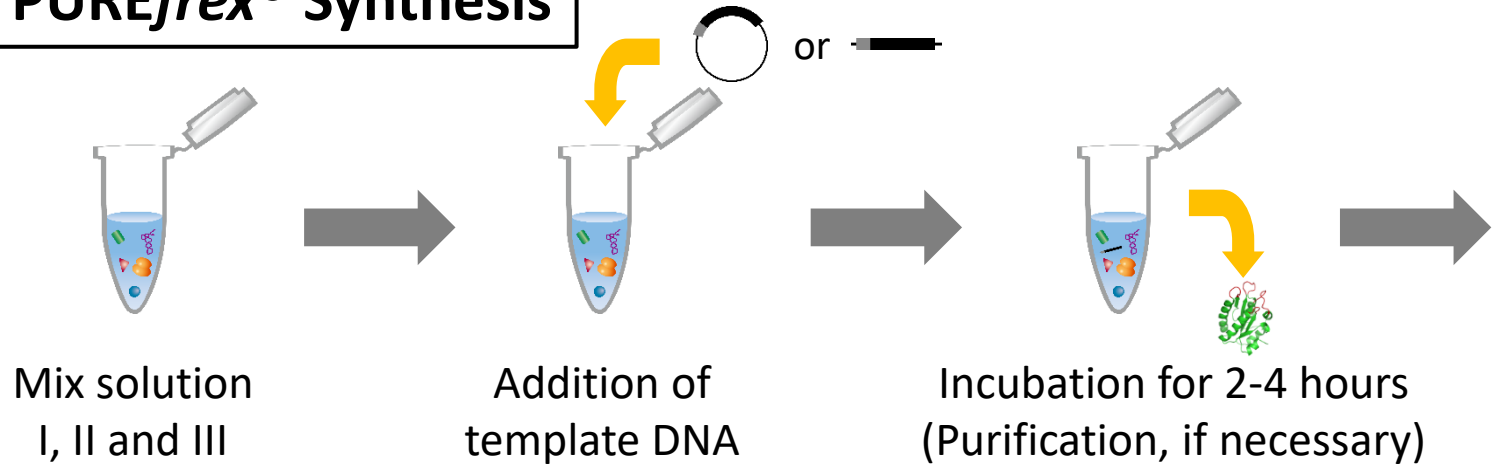
Small error-bar in QC of protein synthesis with tens of different lots

<For stable operation>

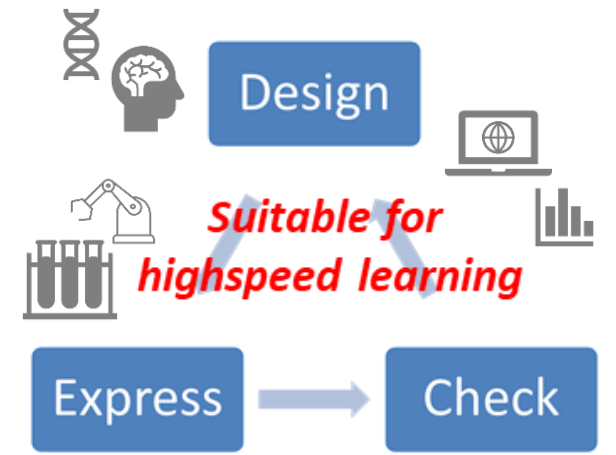


-Improve process in time, effort and size-

PUREfres[®] Synthesis

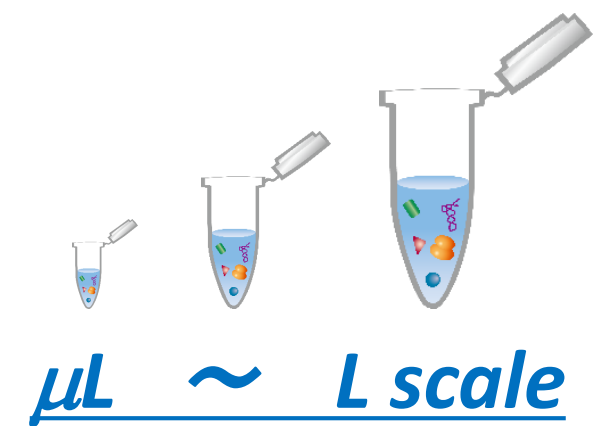
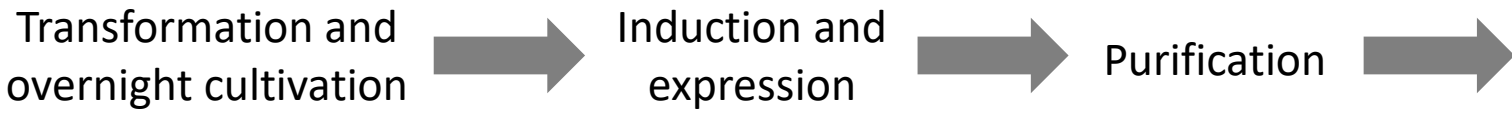


Use for application



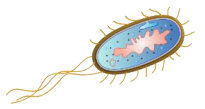
Total: 2-4 hours

E. coli Expression



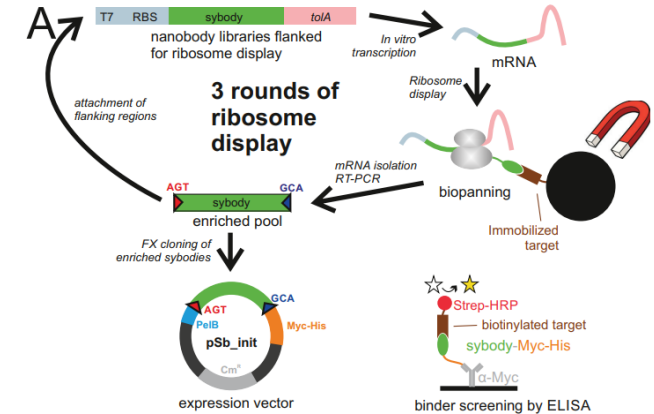
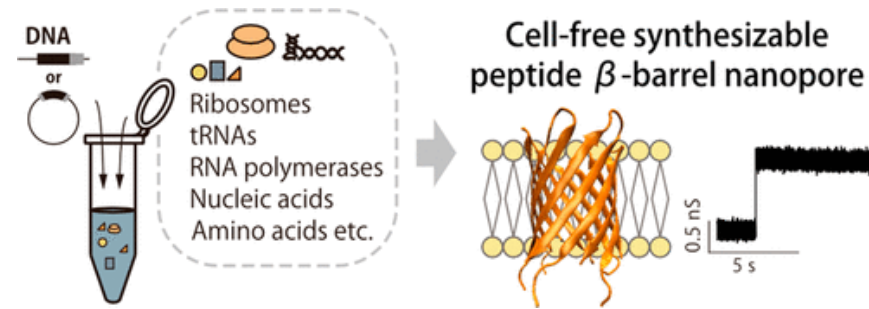
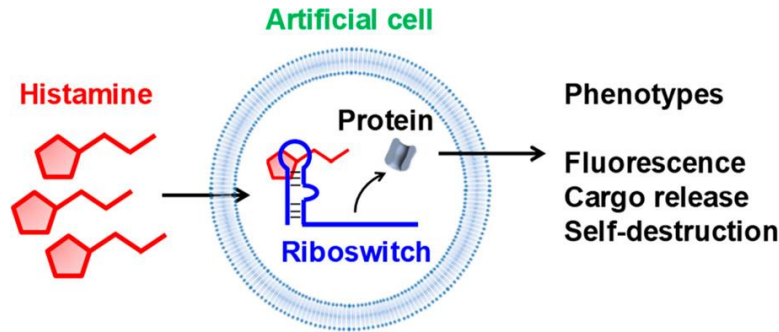
Total: 3-4 days

Great Flexibility from basic research to industrial applications





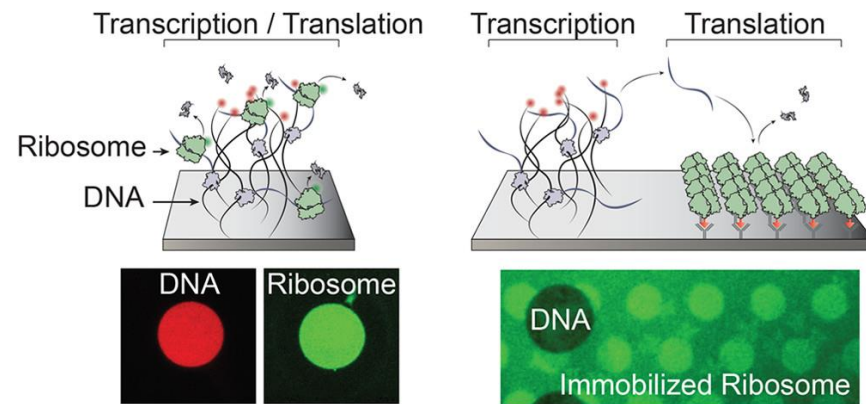
-Broad applications, yet to come!-



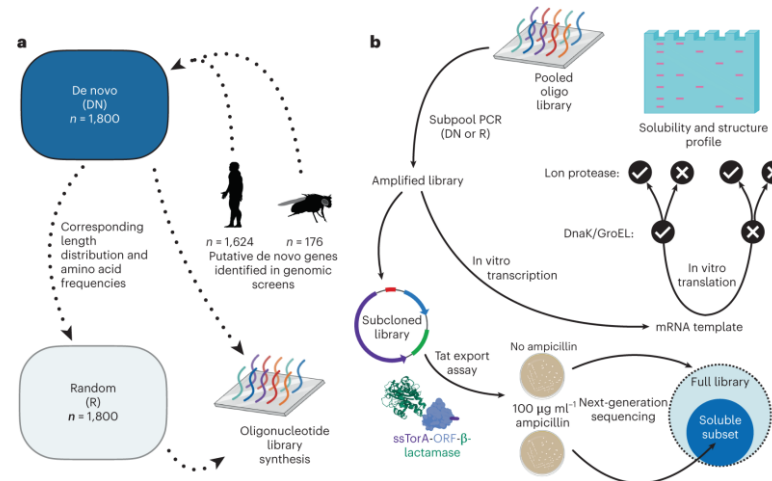
[Dwidar et al. \(2019\) J. Am. Chem. Soc. vol.141, p.11103.](#)

[Fujita et al. \(2023\) ACS Nano. vol.17\(4\), p.3358.](#)

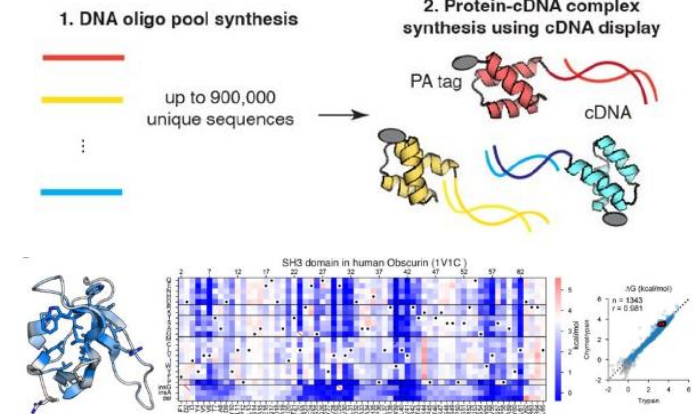
[Zimmermann I. et al. \(2018\) eLife, 7, e34317.](#)



[Levy et al. \(2021\) ACS. Synth. Biol. vol.10, p.609.](#)



[Heames et al. \(2023\) Nature Ecology&Evolution. vol.7, p.570.](#)



[Tsuboyama et al. \(2022\) bioRxiv.](#)
<https://doi.org/10.1101/2022.12.06.519132>

Contact information



To change the platform in biotech industry



For reagent use for expression / screening /synthetic bio, etc.

<https://purefrex.genefrontier.com/>

Any idea for “Beyond cell” or “Beyond life” with PUREfrex?

Please drop by our site! Let’s have a chat!!

