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# Protein Translation Machinery One Shot (TraMOS) Tool

Tech ID: 29194 / UC Case 2015-542-0

### **ABSTRACT**

Researchers at the University of California, Davis have developed a microbial culture capable of translating mRNA molecules into a polypeptide with a single reaction mixture.

### **FULL DESCRIPTION**

Current methods of mRNA translation require mRNA translation machinery (TraM) that is expressed and purified step by step for each member. The assembly of this functional machinery is done by mixing the members in the reactions with very specific ratios, taking time, money, and effort. Preparation of multi-protein complexes, especially in the case of metabolic pathways, remains difficult due to the large number of protein species and stringent requirement of protein ratios to create functional machinery.

Researchers at the University of California, Davis have created a protein translation machinery tool capable of the single-step translation of mRNA and purification of proteins. The method uses a microbial culture comprised of microbial strains (microbial consortium) that have different recombinant plasmids with encoding genes for all the proteins involved in mRNA translation. The unique consortium is able to form a multi-protein complex that can translate mRNA into a polypeptide in a single reaction mixture. The method has already been tested and successfully used in experiments for coupled transcription/ translation reactions. This approach brings modularity to the system and reduces the cost of *in vitro* translation reactions.

# **APPLICATIONS**

► Single step *in vitro* multi-protein translation

# FEATURES/BENEFITS

- ► Single step translation and purification
- Modular system
- ► Reduced cost

## **PATENT STATUS**

Country	Туре	Number	Dated	Case
United States Of America	Published Application	20190376069	12/12/2019	2015-542

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# OTHER INFORMATION

# **KEYWORDS**

translation machinery,
microbial consortia, TraM,
TraMOS, mRNA
translation, multi-protein
complexes, single-step,
polypeptide, in vitro

#### **CATEGORIZED AS**

Materials &

#### **Chemicals**

- Biological
- ► Research Tools
  - ▶ Protein Synthesis

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