

Alternatif “mikromakinalar”

Protein ifade platformları

- ⦿ Konak Hücre
- ⦿ Vektör sistemi

⦿ MEMELİ İFADE SİSTEMLERİ

⦿ BAKTERİ İFADE SİSTEMLERİ

⦿ MAYA İFADE SİSTEMLERİ

⦿ SİNEK İFADE SİSTEMLERİ

⦿ BİTKİ İFADE SİSTEMLERİ

⦿ "CELL FREE" İFADE SİSTEMLERİ

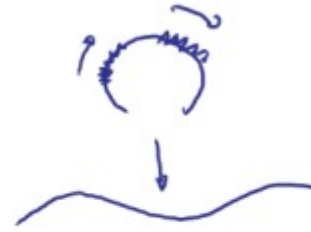
- ⊙ Karmaşık proteinler - Post-translasyonel modifikasyonlar
- ☒ Kolay uygulanabilirlik - Upstream / Downstream
- ⚡ Regülasyonlar
- ⚠ PARA-ÇOKOMEL EĞRİSİ * *

Table 2. Comparison of recombinant expression systems (modified from Cha et al. (2005)).

| | <i>E. coli</i> | Yeast | Insect | Mammalian |
|---|-----------------|----------------|---------------------|--------------------|
| Growth rate | Very fast | Fast | Slow | Very slow |
| Expression yield (based on dry weight) | High (1-5 %) | High (>1 %) | Very high (30 %) | Very low (<1 %) |
| Productivity | Very high | High | High | Low |
| Media cost | Very low | Low | High | Very high |
| Culture techniques | Very easy | Easy | Difficult | Very difficult |
| Production cost | Very low | Low | High | Very high |
| Protein folding | Fair | Good | Very good | Very good |
| Simple glycosylation | No | Yes | Yes | Yes |
| Complex glycosylation | No | No | Yes | Yes |
| Secretion | Poor | Very good | Very good | Very good |
| Availability of genetic systems | Very good | Good | Fair | Fair |

VEKTÖR TASARIMLARI

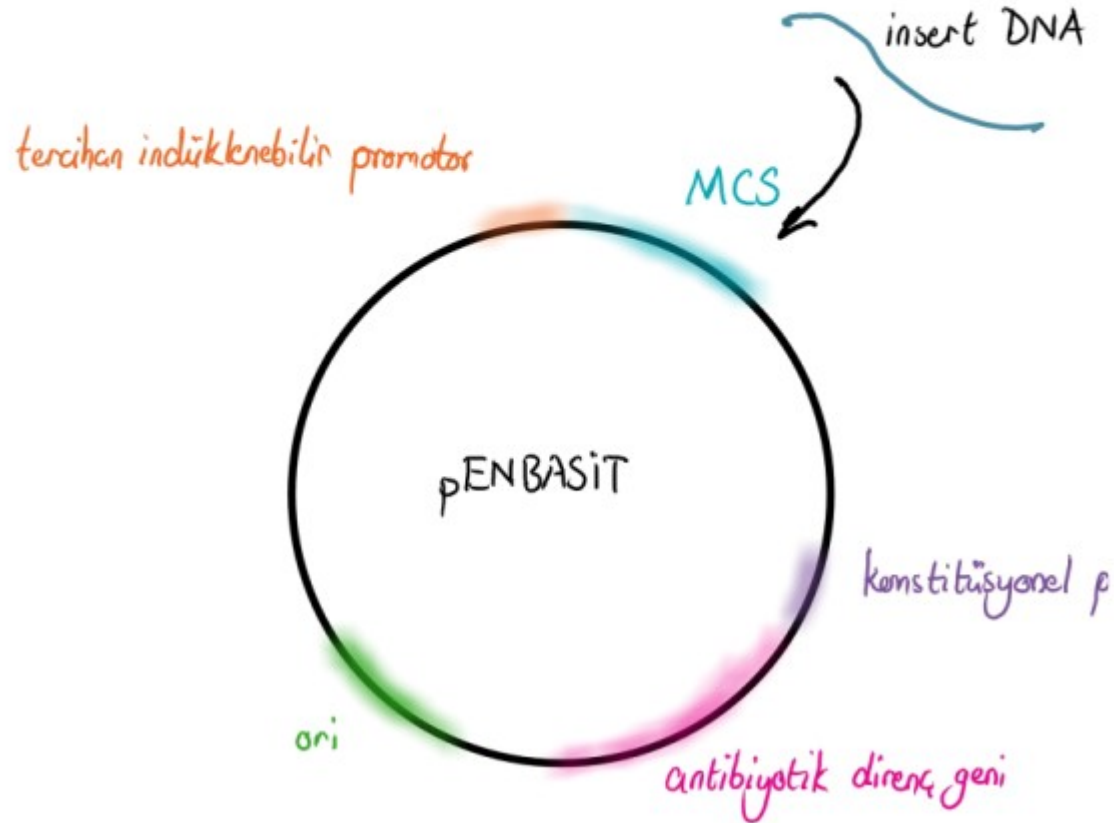
 Epizomal



Karak hücre genomuna
entegrasyon

BAKTERİ İFADE SİSTEMLERİ

Genelde cDNA - plazmid/fajmid
faj transduksiyonu ile gen aktarımı



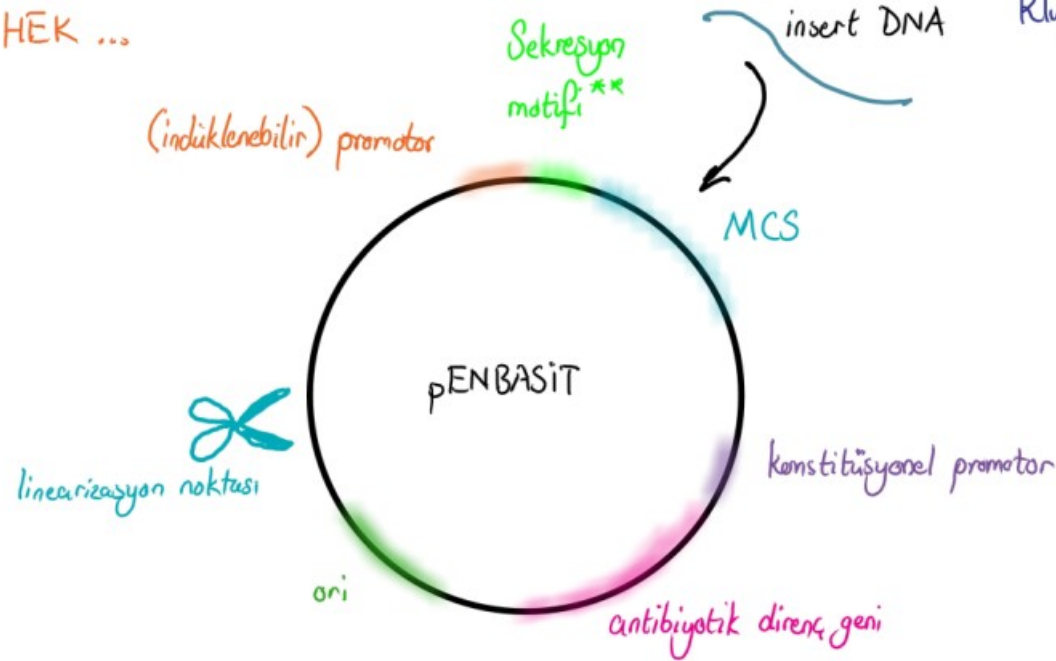
MEMELİ İFADE SİSTEMLERİ

MAYA İFADE SİSTEMLERİ

Bu vektörlerin "yapımı" için bakteri konak hücre kullanılır.
SHUTTLE VECTOR

CHO
HEK ...

Saccharomyces cerevisiae
Pichia pastoris
Kluyveromyces lactis



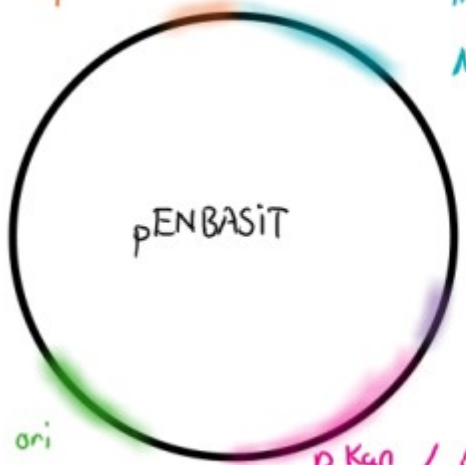
Bakteri hücrelerinde "yapımı" tamamlandıktan sonra vektör izole edilir

Hedef memeli/maya hücrelerine aktarılırken

▲ linearize edilmiş vektör → Kromozoma entegrasyon şansı yüksek

pET sistemi :

T7 promotörü



500 kopye/hücre

insert ~ MCS

M-[6xHis]-~~Protein~~_{motif}-CDS [6xHis]-STOP



T7RNAP

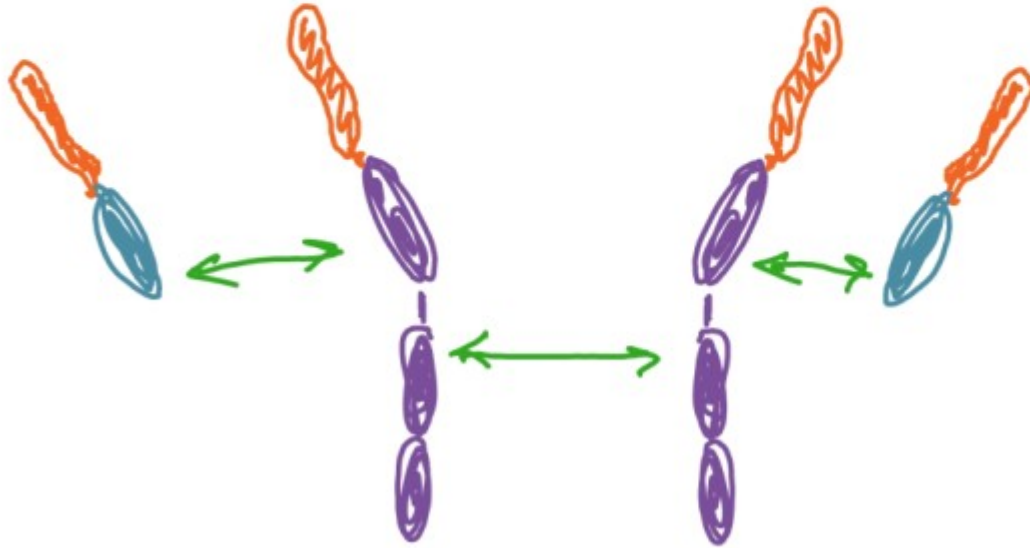
placUV5



kromozomal DNA

"Karmaşık" demişken . . .

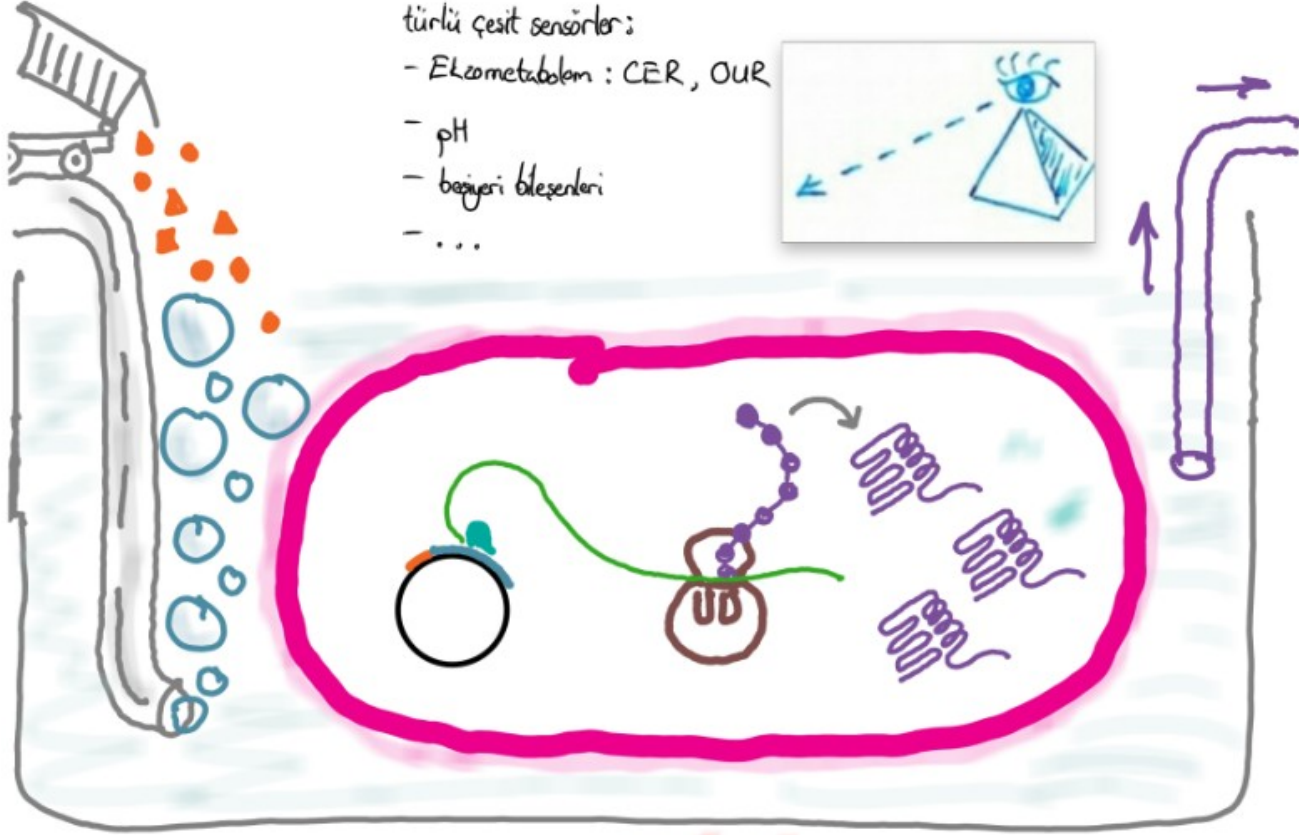
Örneğin, bir antikor molekülünü üretebilir miyiz ?



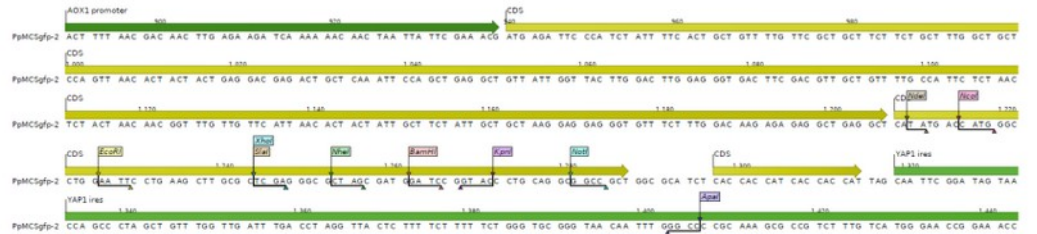
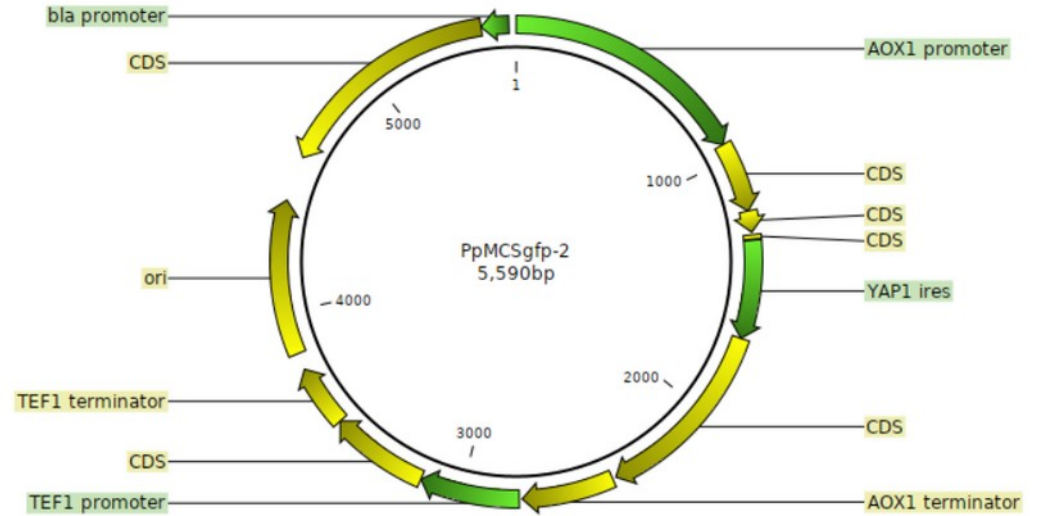
HÜCREYİ İÇERİDEN DIŞARIYA PROGRAMLAMAK

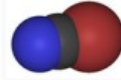
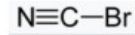
türlü çeşit sensörler:

- Elzometabolom : CER, OUR
- pH
- besiyeri bileşenleri
- ...



Saccharomyces cerevisiae
Pichia pastoris
Kluyveromyces lactis





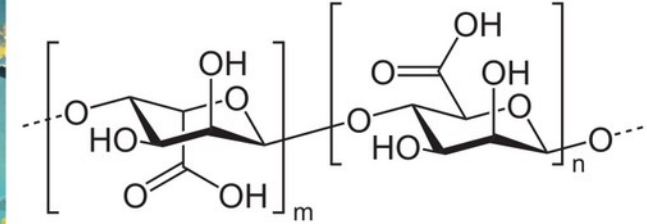
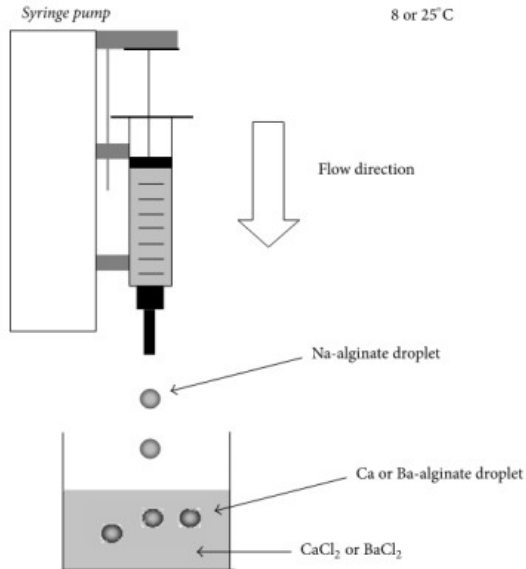
Research Article | Open Access

Volume 2017 | Article ID 9304592 | <https://doi.org/10.1155/2017/9304592>

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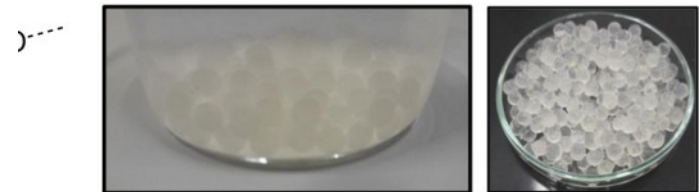
The Size Stability of Alginate Beads by Different Ionic Crosslinkers

Shu-Ling Huang¹ and Yung-Sheng Lin¹



aljinat hidroжели

http:



<https://www.chemedx.org/article/immobilization-lactase-enzyme-alginate-beads-quick-test>