

Untitled

JJ

2021 3 18

iGEM

주소 : iGEM site

List

- Team name
- Organization
- Title
- Track
- Wiki page
- Problem
- Strategy
- Used bioparts
- Vector map

```
No <- c(1,2,3,4,5,6)
Team <- c("TU Kaiserlautern", "Leiden", "AFCM-Egypt", "EPFL", "Munich", "TU_Eindhoven")
Subject <- c("Environment", "Diagnosis", "Therapeutics", "Diagnosis", "Biology", "Therapeutics")
Strategy <- c("Enzymatic reaction", "Pathogenic gene detection", "Circuit for vaccine production", "Diagnosis kit for field usage", "Analysis of transcripts via vesicular export", "precise diagnosis for needs for antibiotics")
iGEM_df <- data.frame(No,Team,Subject,Strategy)
iGEM_df
```

| ## | No | Team | Subject | Strategy |
|------|----|------------------|--------------|--|
| ## 1 | 1 | TU Kaiserlautern | Environment | Enzymatic reaction |
| ## 2 | 2 | Leiden | Diagnosis | Pathogenic gene detection |
| ## 3 | 3 | AFCM-Egypt | Therapeutics | Circuit for vaccine production |
| ## 4 | 4 | EPFL | Diagnosis | Diagnosis kit for field usage |
| ## 5 | 5 | Munich | Biology | Analysis of transcripts via vesicular export |
| ## 6 | 6 | TU_Eindhoven | Therapeutics | precise diagnosis for needs for antibiotics |

```
knitr::kable(iGEM_df, format="markdown")
```

| No | Team | Subject | Strategy |
|----|------------------|--------------|--|
| 1 | TU Kaiserlautern | Environment | Enzymatic reaction |
| 2 | Leiden | Diagnosis | Pathogenic gene detection |
| 3 | AFCM-Egypt | Therapeutics | Circuit for vaccine production |
| 4 | EPFL | Diagnosis | Diagnosis kit for field usage |
| 5 | Munich | Biology | Analysis of transcripts via vesicular export |
| 6 | TU_Eindhoven | Therapeutics | precise diagnosis for needs for antibiotics |

TU Kaiserslautern

- Year : 2019
- Organization : Technical University of Kaiserslautern / Germany
- Title : Chlamy Yummy - Revolutionizing plastic degradation by introducing Chlamydomonas reinhardtii as a eukaryotic secretion platform
- Track : Environment
- wiki
- Subject : IPBES에 의한 동식물 멸종 / microtoxic pollutants에 의한 수질 오염
- Strategy : Green algae Chlamydomonas reinhardtii를 이용한 micropollutants 분해 효소 발현
- Used bioparts : MoClo system

```
Name <- c("BBa_K3589107", "BBa_K3589108", "BBa_K3589109", "BBa_K3589110", "BBa_K3589150", "BBa_K3589151")
Type <- c("Coding", "Intermediate/Coding", "Coding", "Coding", "Tag", "Tag", "Composite", "Composite", "Composite")
Table_TU <- data.frame(Name, Type)
knitr::kable(Table_TU, format="markdown")
```

| Name | Type |
|--------------|---------------------|
| BBa_K3589107 | Coding |
| BBa_K3589108 | Intermediate/Coding |
| BBa_K3589109 | Coding |
| BBa_K3589110 | Coding |
| BBa_K3589150 | Tag |
| BBa_K3589151 | Tag |
| BBa_K3589201 | Composite |
| BBa_K3589202 | Composite |
| BBa_K3589203 | Composite |
| BBa_K3589204 | Composite |
| BBa_K3589205 | Composite |
| BBa_K3589206 | Composite |
| BBa_K3589207 | Composite |
| BBa_K3589208 | Composite |
| BBa_K3589209 | Composite |
| BBa_K3589210 | Composite |
| BBa_K3589211 | Composite |
| BBa_K3589212 | Composite |

- Vector map : pGEX-6P-1 expression vector

Leiden

- Year : 2020
- Organization : Leiden university / The Netherlands
- Title : Rapidmic: A novel modular point-of-care diagnostic tool for rapid epidemic response
- wiki
- Subject : Pandemic 상황을 빠르게 해결하기 위해 global한 질병 진단 방법 필요

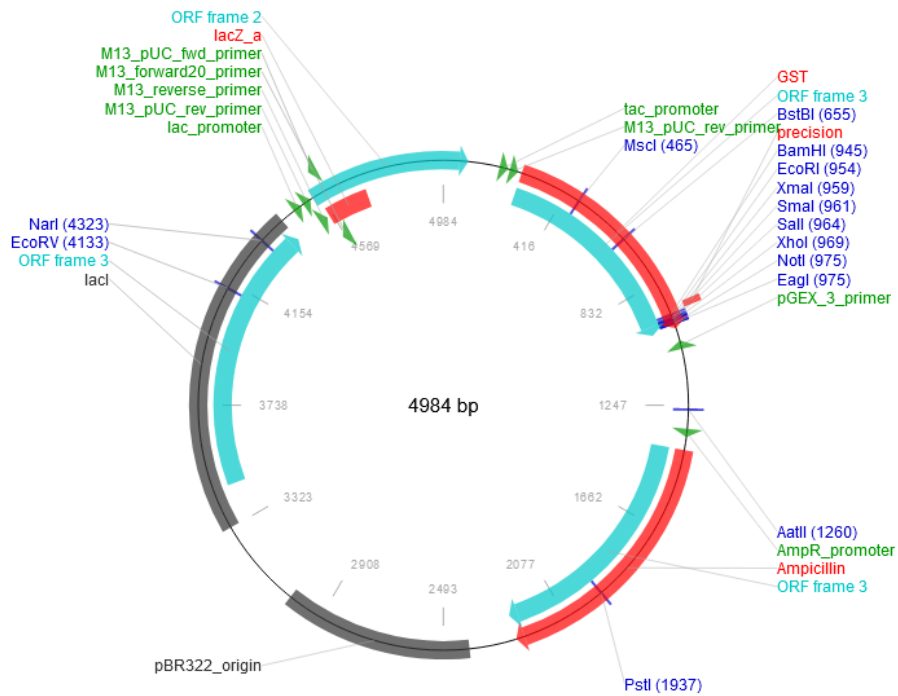


Figure 1: TU Kaiserslautern

- Strategy : Pathogenic species의 핵산을 빠르게 감지하기 위한 방법 개발 isothermal DNA amplification method에 colorimetric readout을 병행함
- Method : Pathogen의 genome에 맞는 여러 세트의 프라이머를 사용, 다양한 pathogen에 적용될 수 있도록 함. (specificity 문제 고려 필요)
- Used bioparts

```
DNAzyme <- c("BBa_K1614007", "BBa_K3343001", "BBa_K3343000")
Description <- c("Original part, most widely used DNAzyme", "Improved part with additional adenine", "DNAzyme with highest activity reported in literature")
Table_Leiden <- data.frame(DNAzyme, Description)
knitr::kable(Table_Leiden, format="markdown")
```

| DNAzyme | Description |
|--------------|--|
| BBa_K1614007 | Original part, most widely used DNAzyme |
| BBa_K3343001 | Improved part with additional adenine |
| BBa_K3343000 | DNAzyme with highest activity reported in literature |

AFCM-Egypt

- Year : 2020
- Organization : Armed Forces College of Medicine / Egypt
- Title : Neo-epitope discovery for DNA-launched RNA replicons: paving the way to efficient breast cancer vaccination
- wiki
- Subject : DNA-launched RNA replicons를 이용한 Breast cancer 백신 개발 연구
- Strategy : multi-epitope DNA vaccine 생산을 위한 DNA vaccine circuit 제작
- Used bioparts

```
Biobrick <- c("BBa_K3504000", "BBa_K3504001", "BBa_K3504002", "BBa_K3504003", "BBa_K3504004", "BBa_K3504005")
```