

Določanje kateri restrikcijski encimi so si sorodni med target regijo  
na plasmidu in cry genu

```
pres <- read.table(file = "plasmid_REs.tsv", sep = "\t", header = T)
fres <- read.table(file = "fragment_REs.tsv", sep = "\t", header = T)
```

```
head(pres)
```

```
## Enzyme
## 1 AatII
## 2 AccI
## 3 AflIII
## 4 AhdI
## 5 AlwNI
## 6 ApoI
```

```
head(fres)
```

```
## Enzyme
## 1 AccI
## 2 AflIII
## 3 ApaI
## 4 ApaLI
## 5 BbsI
## 6 BlpI
```

```
pvec <- pres[, 1]
fvec <- fres[, 1]
```

```
print(pvec)
```

```
## [1] "AatII" "AccI" "AflIII" "AhdI" "AlwNI" "ApoI"
## [7] "BmgBI" "BsaI" "BsaBI" "BspQI" "BsrGI" "BstAPI"
## [13] "BtgI" "EagI" "EcoO109I" "EcoRI" "EcoRV" "HincII"
## [19] "HindIII" "KasI" "MauBI" "NarI" "NcoI" "NdeI"
## [25] "NotI" "NsiI" "PluTI" "PshAI" "Sali" "SapI"
## [31] "SbfI" "ScaI" "SfoI" "SphI" "SspI" "StyI"
## [37] "TsoI" "ZraI"
```

```
print(fvec)
```

```
## [1] "AccI" "AflIII" "ApaI" "ApaLI" "BbsI" "BlpI" "BpuEI" "BsaI"
## [9] "BseRI" "BsmBI" "BstXI" "BtgZI" "DraIII" "Esp3I" "HincII" "MluI"
## [17] "MreI" "MscI" "NaeI" "NgoMIV" "NspI" "PaeR7I" "PacCI" "PpuMI"
## [25] "PspOMI" "PstI" "Sali" "Sau3AI" "SphI" "TsoI" "XbaI" "XhoI"
## [33] "XmnI"
```

```
common_res <- pvec[which(pvec %in% fvec)]
uncommon_p <- pvec[which(!(pvec %in% fvec))]
uncommon_f <- fvec[which(!(fvec %in% pvec))]
```

---

Encimi prisotni v obeh:

```
common_res
```

```
## [1] "AccI" "BsaI" "HincII" "SalI" "SphI" "TsoI"
```

Encimi prisotni samo v plazmidu:

```
uncommon_p
```

```
## [1] "AatII" "AflIII" "AhdI" "AlwNI" "ApoI" "BmgBI"
## [7] "BsaBI" "BspQI" "BsrGI" "BstAPI" "BtgI" "EagI"
## [13] "Eco0109I" "EcoRI" "EcoRV" "HindIII" "KasI" "MauBI"
## [19] "NarI" "NcoI" "NdeI" "NotI" "NsiI" "PluTI"
## [25] "PshAI" "SapI" "SbfI" "ScaI" "SfoI" "SspI"
## [31] "StyI" "ZraI"
```

Encimi prisotni sami v cry genu:

```
uncommon_f
```

```
## [1] "AflIII" "ApaI" "ApaLI" "BbsI" "BlpI" "BpuEI" "BseRI" "BsmBI"
## [9] "BstXI" "BtgZI" "DraIII" "Esp3I" "MluI" "MreI" "MscI" "NaeI"
## [17] "NgoMIV" "NspI" "PaeR7I" "PacCI" "PpuMI" "PspOMI" "PstI" "Sau3AI"
## [25] "XbaI" "XhoI" "XmnI"
```

---

Encim za vstavljanje

1. ne sme biti prisoten v fragmentu
2. mora se nahajati med promotorjem in GFP genom

Ker jih je malo med promotorjem in GFPjem, sem jih prepisal.

Moti me ker je StyI v fragmentu, ampak ga ni prikazalo na seznamu encimov za fragment.. Dodal ga bom zraven.

```
fvec2 <- c(fvec, "StyI")
```

```
plasmid_candidates <- c("StyI", "BtgI", "NcoI", "AccI", "SalI", "HincII")
```

Kateri od njih je prisoten v fragmentu?

```
plasmid_candidates[which(plasmid_candidates %in% fvec2)]
```

```
## [1] "StyI" "AccI" "SalI" "HincII"
```

Kateri od njih ni prisoten v fragmentu?

```
plasmid_candidates[which(!(plasmid_candidates %in% fvec2))]
```

```
## [1] "BtgI" "NcoI"
```