Adapter lengths for all datasets

2025-03-19

Load all data

```
a60_unmod <- read.table(file = "a60_unmod_polyA_position.tsv", sep = "\t", header = TRUE)
a60_30 <- read.table(file = "a60_30_polyA_position.tsv", sep = "\t", header = TRUE)
a60_60 <- read.table(file = "a60_60_polyA_position.tsv", sep = "\t", header = TRUE)

a120_unmod <- read.table(file = "a120_unmod_polyA_position.tsv", sep = "\t", header = TRUE)
a120_1mod <- read.table(file = "a120_1mod_polyA_position.tsv", sep = "\t", header = TRUE)
a120_2mod <- read.table(file = "a120_2mod_polyA_position.tsv", sep = "\t", header = TRUE)
a120_4mod <- read.table(file = "a120_4mod_polyA_position.tsv", sep = "\t", header = TRUE)
```

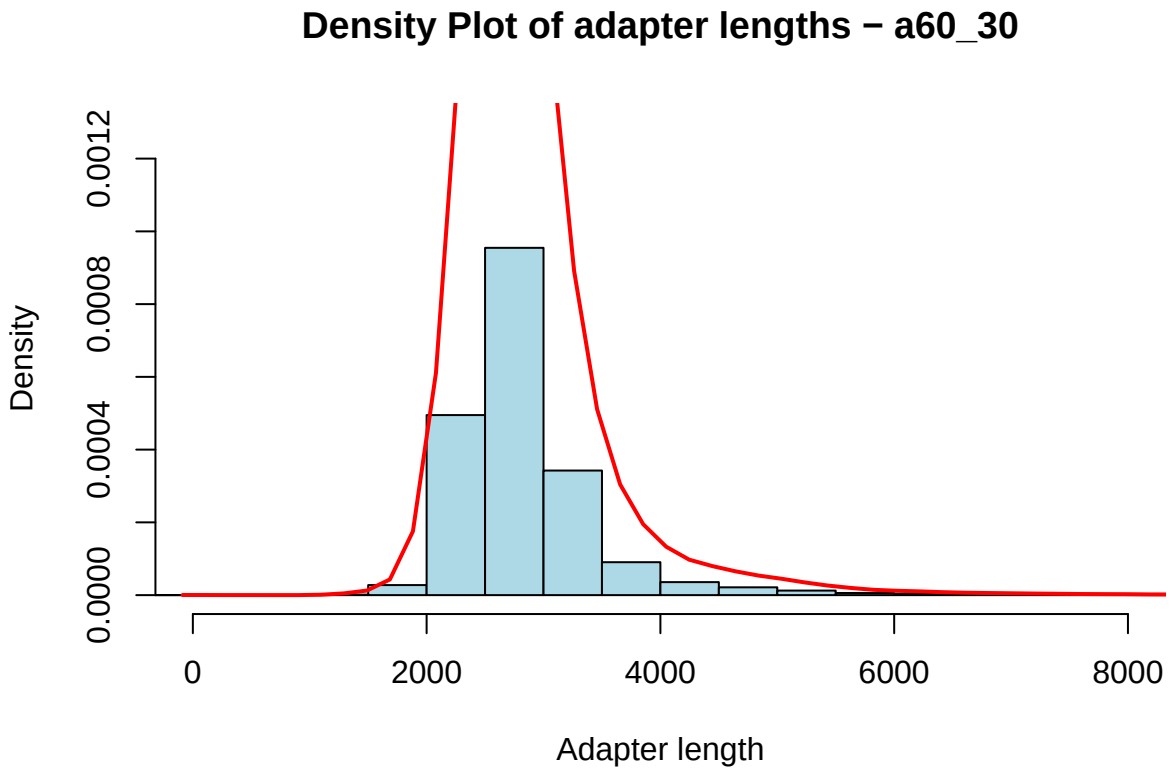
Define lengths of adapter

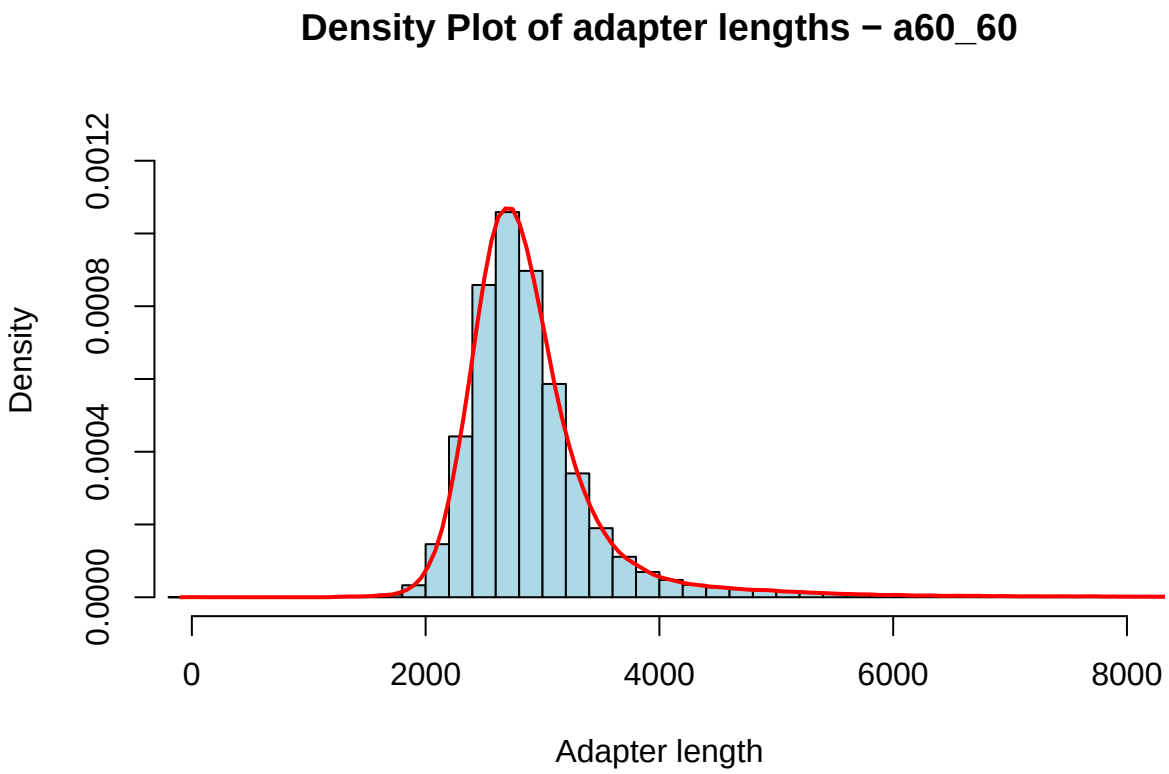
```
a60_unmod["adapter_length"] <- a60_unmod$start - 1
a60_30["adapter_length"] <- a60_30$start - 1
a60_60["adapter_length"] <- a60_60$start - 1

a120_unmod["adapter_length"] <- a120_unmod$start - 1
a120_1mod["adapter_length"] <- a120_1mod$start - 1
a120_2mod["adapter_length"] <- a120_2mod$start - 1
a120_4mod["adapter_length"] <- a120_4mod$start - 1
```

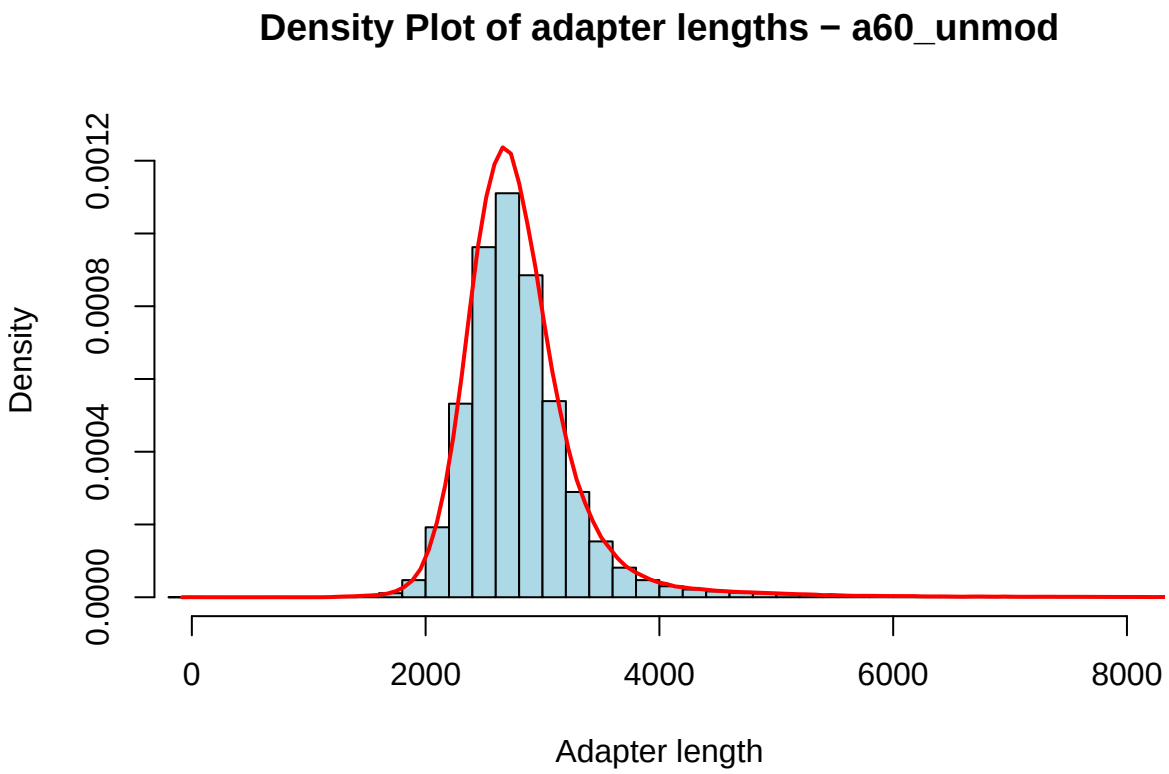
Histograms of all the data in each set

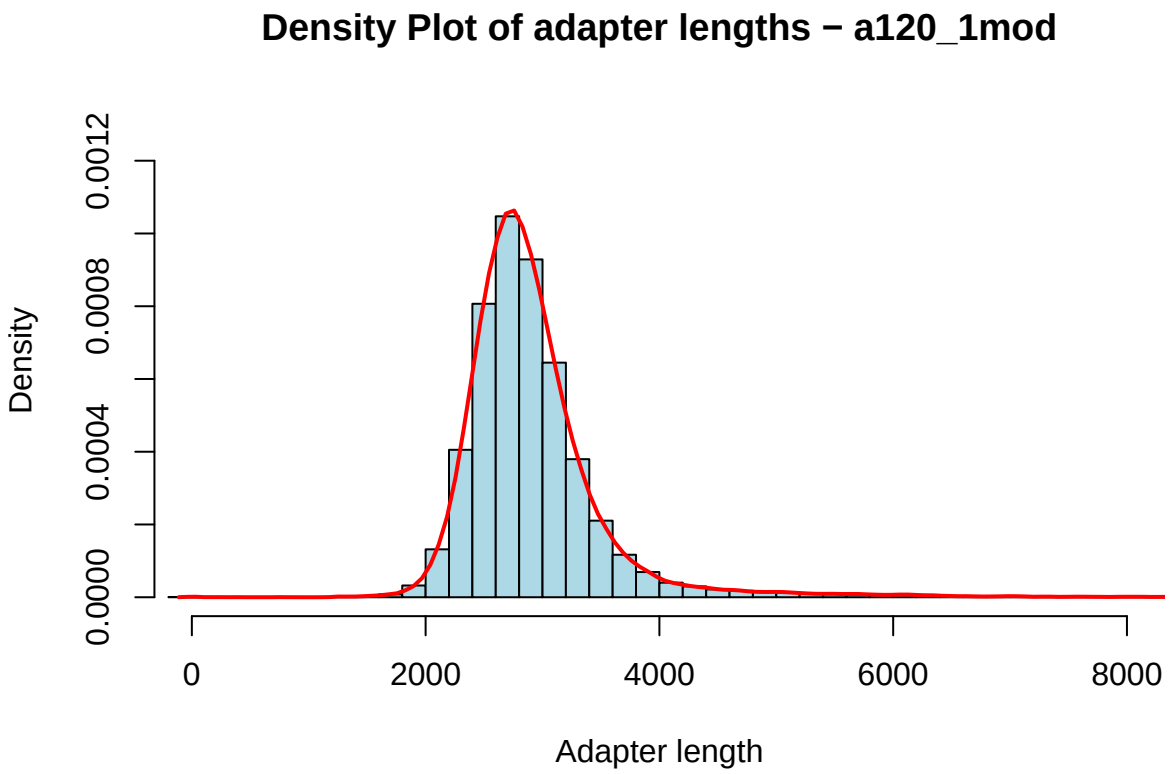
```
datasets <- list(
  a60_30 = a60_30,
  a60_60 = a60_60,
  a60_unmod = a60_unmod,
  a120_1mod = a120_1mod,
  a120_2mod = a120_2mod,
  a120_4mod = a120_4mod,
  a120_unmod = a120_unmod
)

for (name in names(datasets)) {
  adapter_length <- datasets[[name]]$adapter_length

  hist(adapter_length,
       probability = TRUE,
```

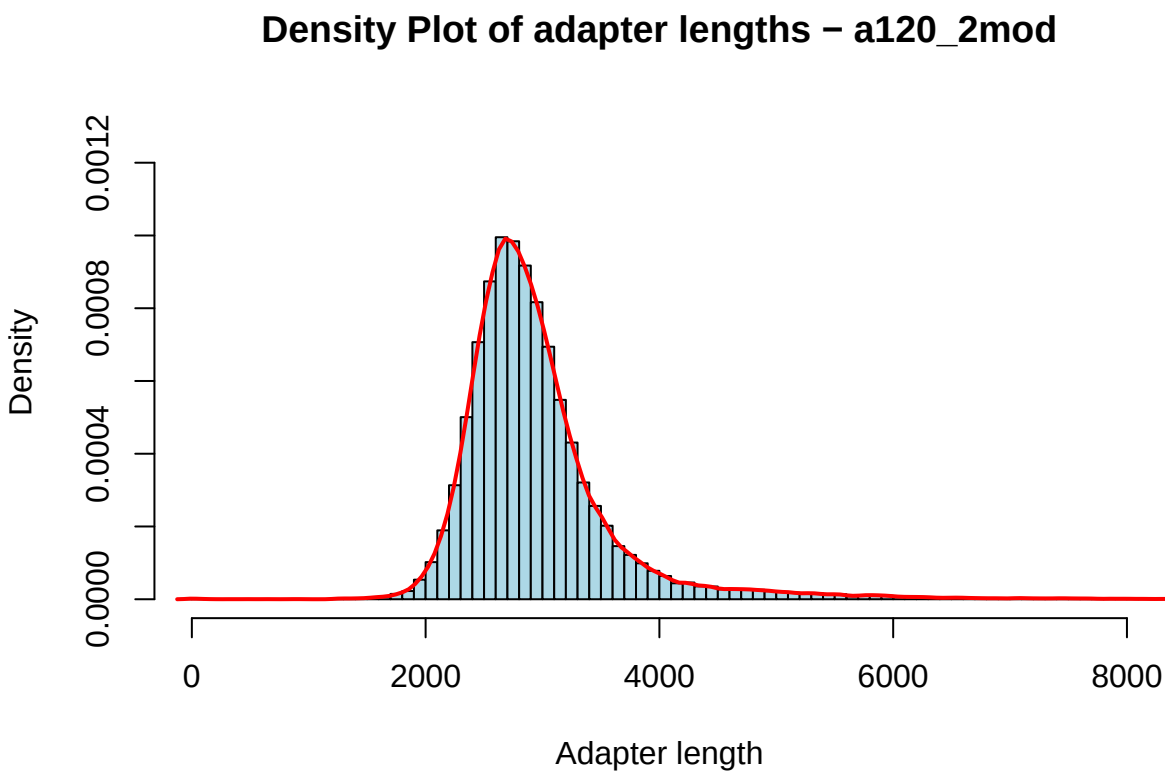
```
       main = paste("Density Plot of adapter lengths -", name),
       xlab = "Adapter length",
       ylab = "Density",
       xlim = c(0, 8000),
       ylim = c(0, 0.0013),
       col = "lightblue",
       border = "black",
       breaks = 200)

  lines(density(adapter_length), col = "red", lwd = 2)
}
```

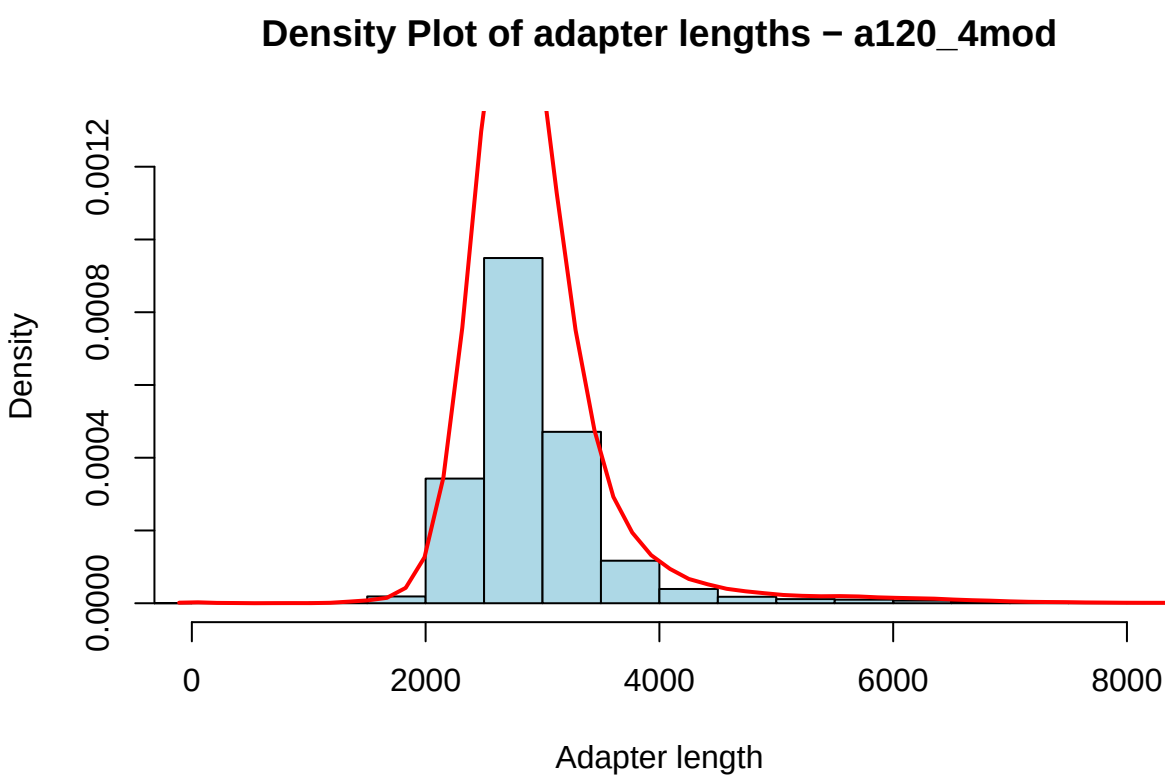


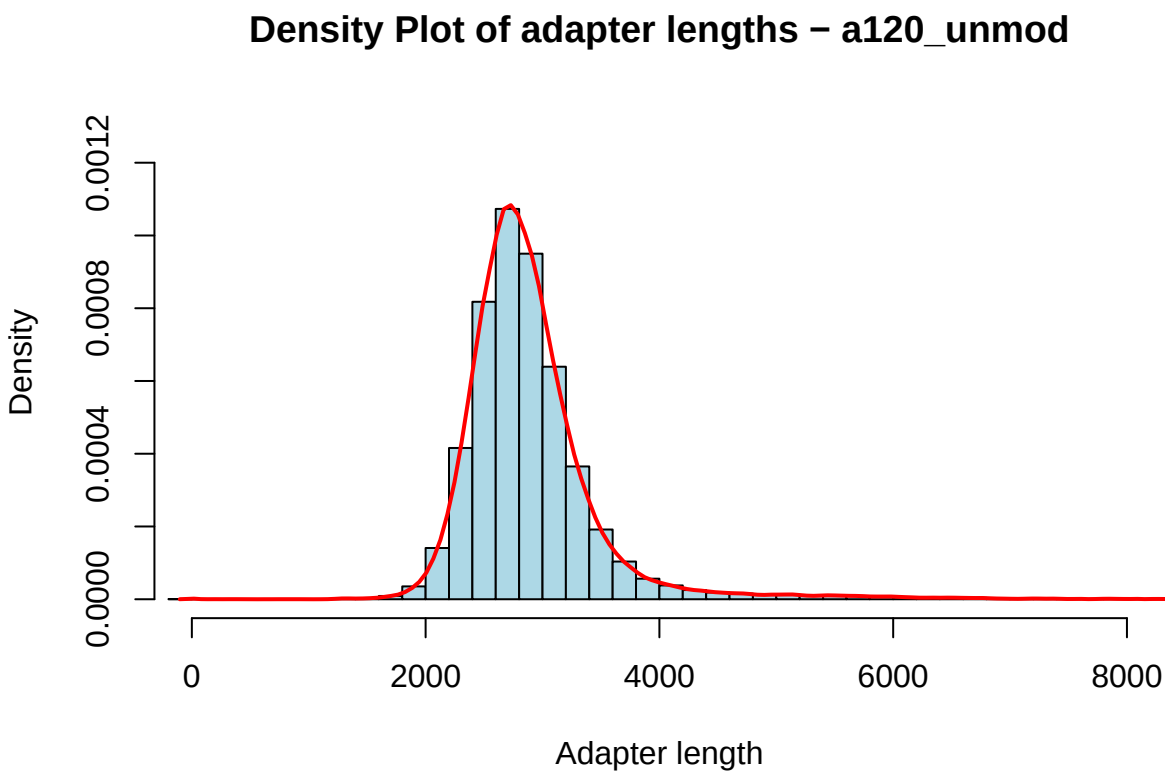

Density Plot of adapter lengths − a60_60
Density
0.0000
0.0004
0.0008
0.0012
0
2000
4000
6000
8000
Adapter length


Density Plot of adapter lengths − a60_unmod
Density
0.0000
0.0004
0.0008
0.0012
0
2000
4000
6000
8000
Adapter length


Density Plot of adapter lengths − a120_1mod
Density
0.0000
0.0004
0.0008
0.0012
0
2000
4000
6000
8000
Adapter length

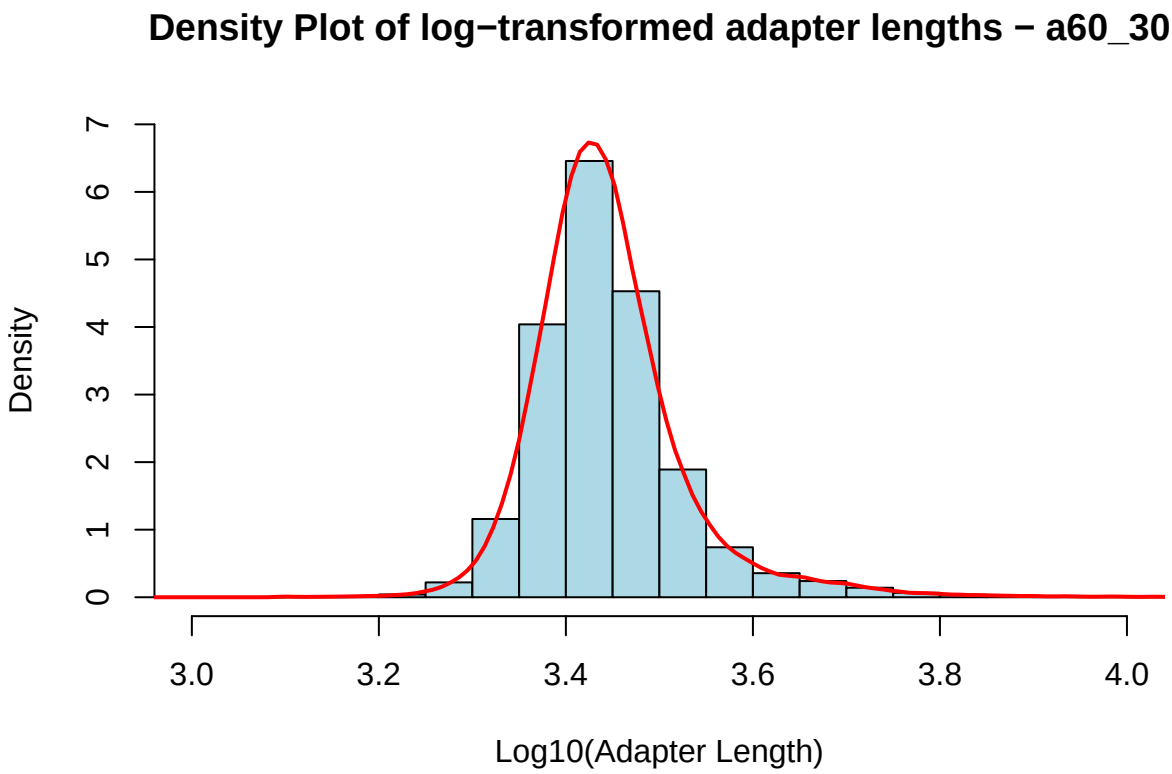

Density Plot of adapter lengths − a120_2mod
Density
0.0000
0.0004
0.0008
0.0012
0
2000
4000
6000
8000
Adapter length

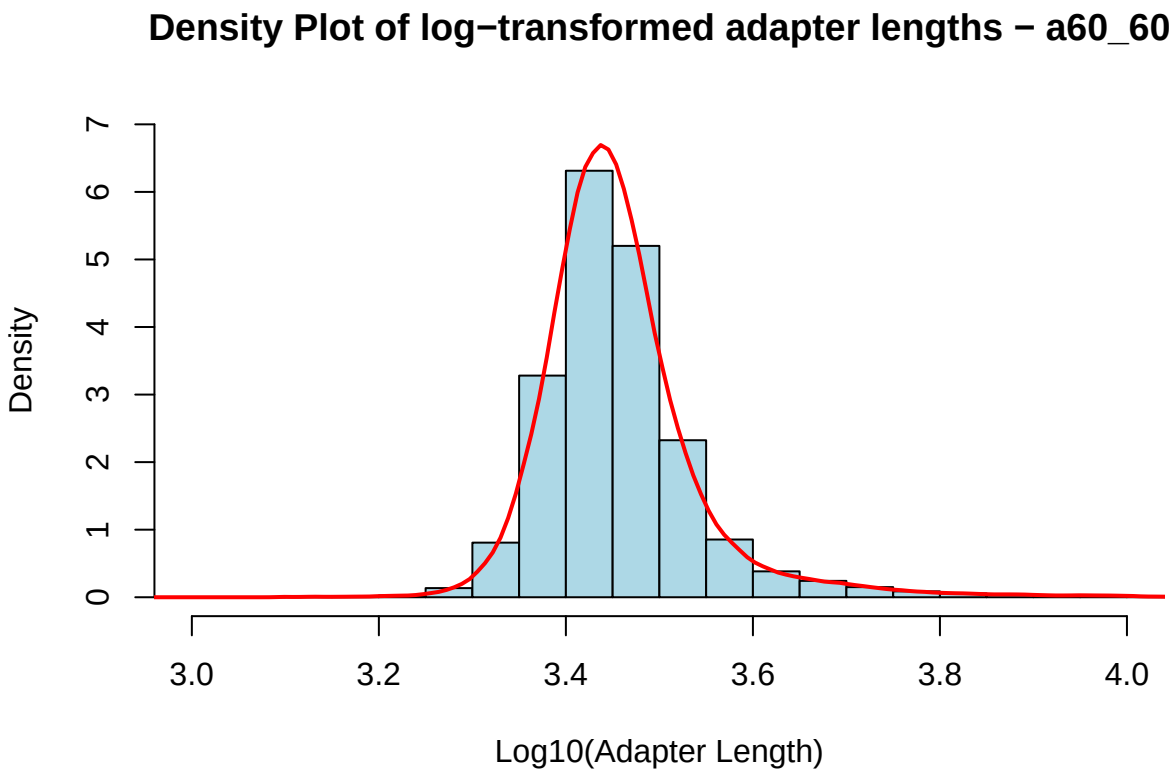

Density Plot of adapter lengths − a120_4mod
Density
0.0000
0.0004
0.0008
0.0012
0
2000
4000
6000
8000
Adapter length

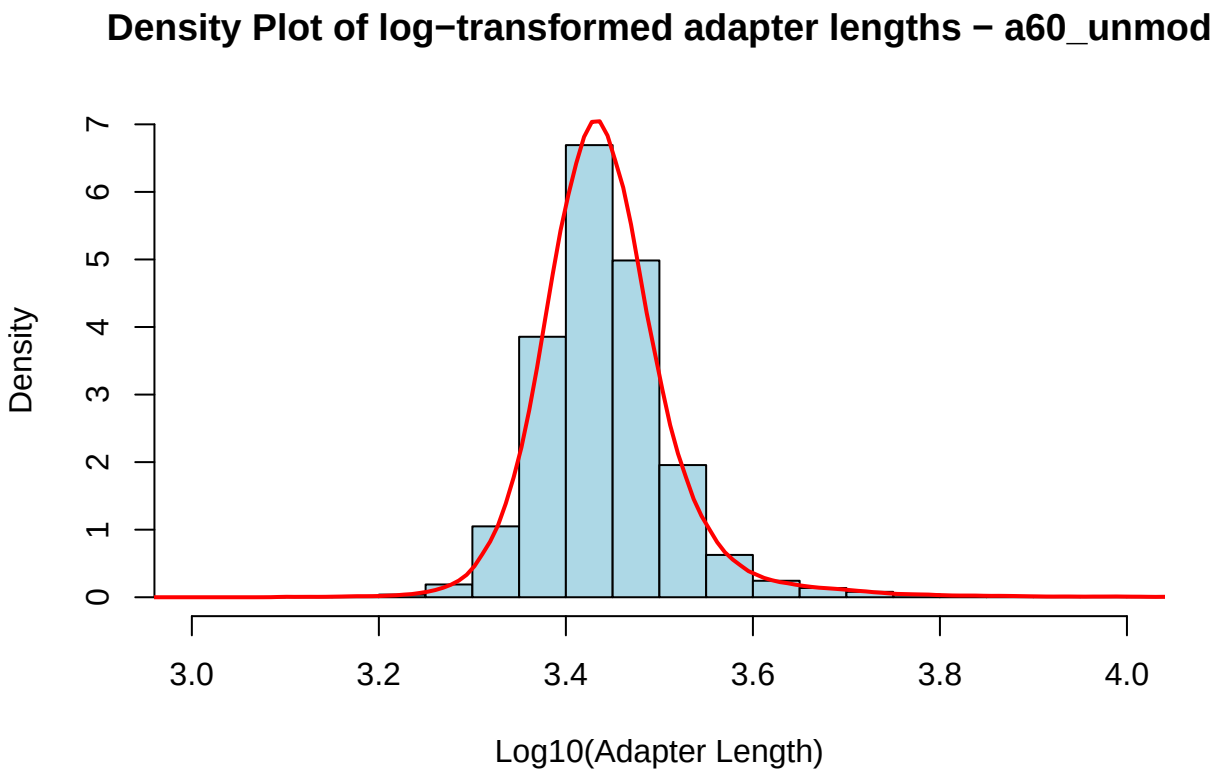


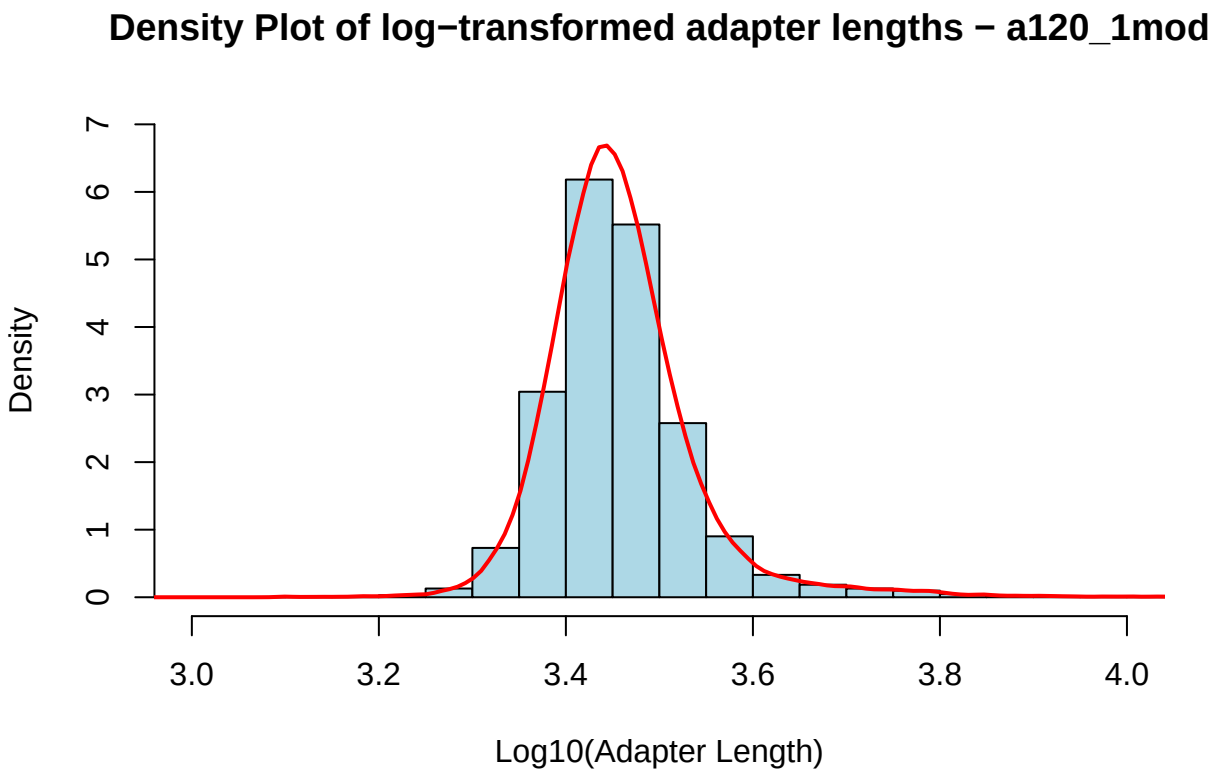
Histograms of all the data with log transformation

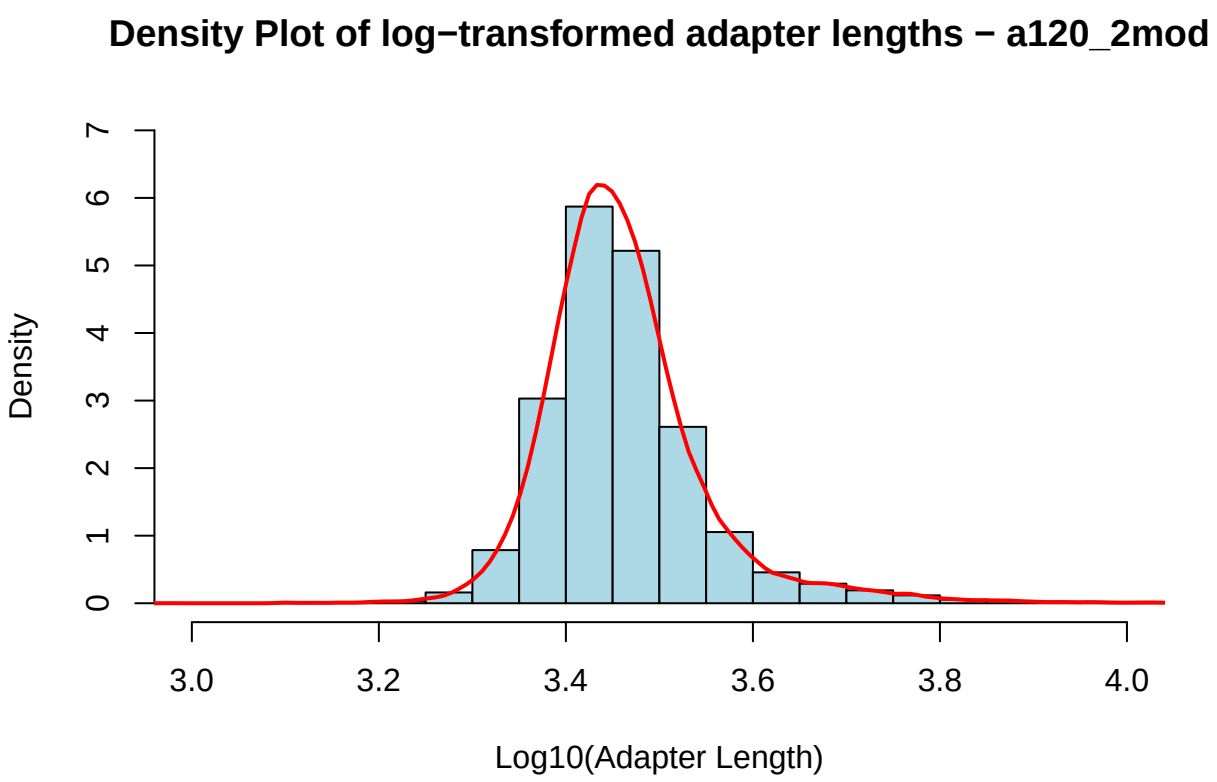
```
for (name in names(datasets)) {
  adapter_length <- datasets[[name]]$adapter_length

  # Remove values <= 0
  adapter_length <- adapter_length[adapter_length > 0]

  log_adapter_length <- log10(adapter_length)

  hist(log_adapter_length,
       probability = TRUE,
       main = paste("Density Plot of log-transformed adapter lengths -", name),
       xlab = "Log10(Adapter Length)",
       ylab = "Density",
       border = "black",
       col = "lightblue",
       xlim = c(3, 4),
       ylim = c(0, 7),
       breaks = 100)

  lines(density(log_adapter_length), col = "red", lwd = 2)
}
```

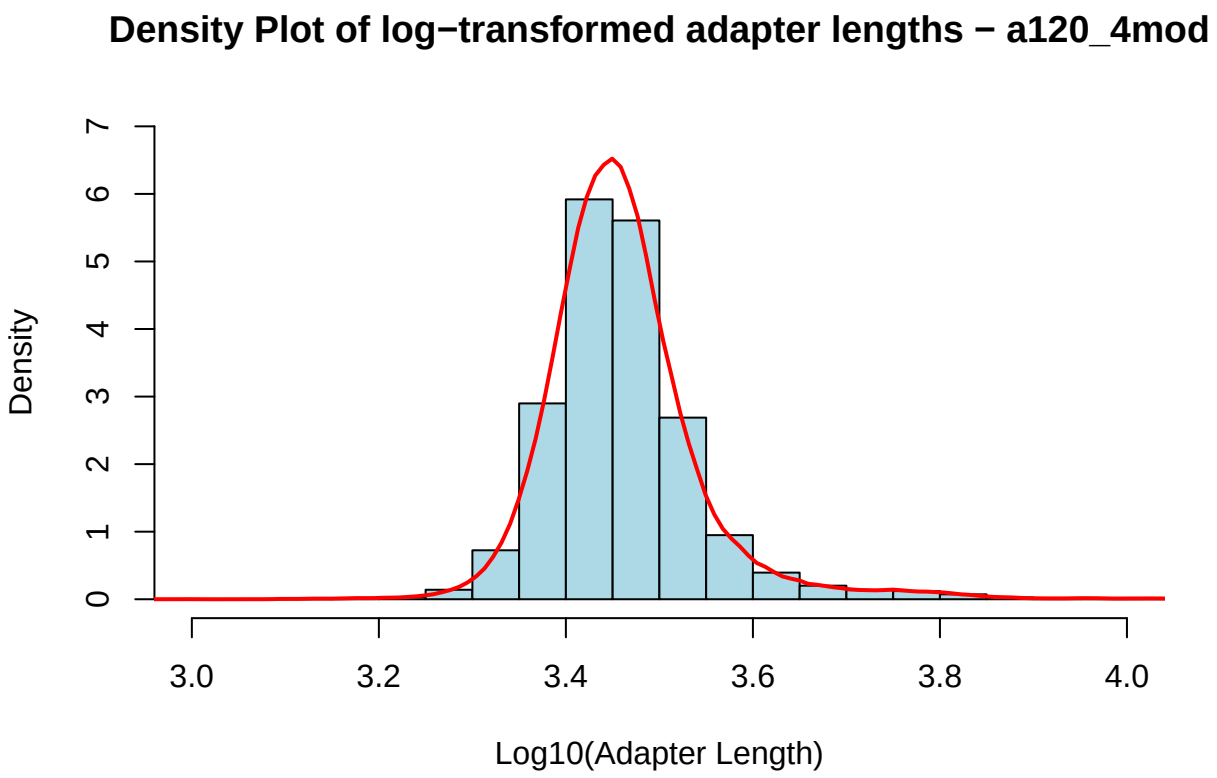

Density Plot of log−transformed adapter lengths − a60_30
Density
0
1
2
3
4
5
6
7
3.0
3.2
3.4
3.6
3.8
4.0
Log10(Adapter Length)

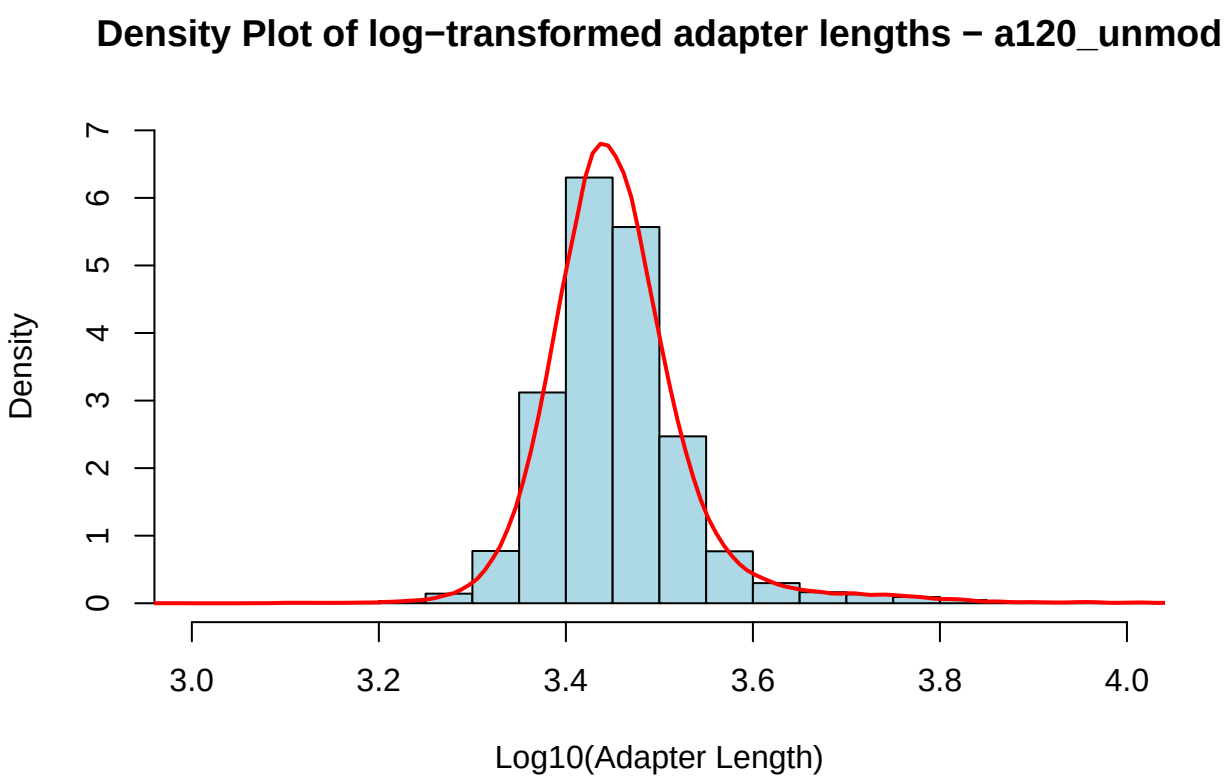

Density Plot of log−transformed adapter lengths − a60_60
Density
0
1
2
3
4
5
6
7
3.0
3.2
3.4
3.6
3.8
4.0
Log10(Adapter Length)


Density Plot of log−transformed adapter lengths − a60_unmod
Density
0
1
2
3
4
5
6
7
3.0
3.2
3.4
3.6
3.8
4.0
Log10(Adapter Length)


Density Plot of log−transformed adapter lengths − a120_1mod
Density
0
1
2
3
4
5
6
7
3.0
3.2
3.4
3.6
3.8
4.0
Log10(Adapter Length)


Density Plot of log−transformed adapter lengths − a120_2mod
Density
0
1
2
3
4
5
6
7
3.0
3.2
3.4
3.6
3.8
4.0
Log10(Adapter Length)


Density Plot of log−transformed adapter lengths − a120_4mod
Density
0
1
2
3
4
5
6
7
3.0
3.2
3.4
3.6
3.8
4.0
Log10(Adapter Length)


Density Plot of log−transformed adapter lengths − a120_unmod
Density
0
1
2
3
4
5
6
7
3.0
3.2
3.4
3.6
3.8
4.0
Log10(Adapter Length)