# Purpose: Air Microbiome project- Script to graph OPC data

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#code for loading data

#Install ggplot2 and stringr

if (!file.exists("data")) dir.create("data")

if (!file.exists("src")) dir.create("src")

if (!file.exists("results")) dir.create("results")

if (!file.exists("doc")) dir.create("doc")

library(ggplot2)

library(stringr)

OPC\_1\_B3Ext<-read.csv("C:/Users/mclare/Desktop/20150406\_ocp1\_data\_r.csv", header=T)

OPC\_2\_B3MPR<-read.csv("C:/Users/mclare/Desktop/20150406\_ocp2\_data\_adj\_r.csv", header=T)

OPC\_3\_B3Ext<-read.csv("C:/Users/mclare/Desktop/20150406\_ocp3\_data\_adj\_r.csv", header=T)

OPC\_4\_B2EBL\_Uma<-read.csv("C:/Users/mclare/Desktop/20150406\_ocp4\_data\_adj\_r.csv", header=T)

##scatter plot code

par(mfrow=c(3,2),mar=c(5, 5, 2, 2) + 0.1) #it goes c(bottom, left, top, right)

#title("OPC Data", outer = TRUE, cex = 1)

# 0.3

plot(OPC\_2\_B3MPR[,2], xlab="Time", ylab="0.3um Count", col="purple",ylim=c(10000,180000),xlim=c(0, 700), cex.lab=1.5)

points(OPC\_3\_B3Ext[,2], col="blue")

points(OPC\_4\_B2EBL\_Uma[,2], col="orange")

legend("right", c("B3 MPR","B3 Ext", "B2 EBL(Uma)"), fill=c("purple","blue","orange"))

#2.0

plot(OPC\_2\_B3MPR[,5], xlab="Time", ylab="2.0um Count", col="purple",ylim=c(0,2000),xlim=c(0, 700), cex.lab=1.5)

points(OPC\_3\_B3Ext[,5], col="blue")

points(OPC\_4\_B2EBL\_Uma[,5], col="orange")

legend("right", c("B3 MPR","B3 Ext", "B2 EBL(Uma)"), fill=c("purple","blue","orange"))

#0.5

plot(OPC\_2\_B3MPR[,3], xlab="Time", ylab="0.5um Count", col="purple",ylim=c(1000,26000),xlim=c(0, 700), cex.lab=1.5)

points(OPC\_3\_B3Ext[,3], col="blue")

points(OPC\_4\_B2EBL\_Uma[,3], col="orange")

legend("right", c("B3 MPR","B3 Ext", "B2 EBL(Uma)"), fill=c("purple","blue","orange"))

#5.0

plot(OPC\_2\_B3MPR[,6], xlab="Time", ylab="5.0um Count", col="purple",ylim=c(0,400),xlim=c(0, 700), cex.lab=1.5)

points(OPC\_3\_B3Ext[,6], col="blue")

points(OPC\_4\_B2EBL\_Uma[,6], col="orange")

legend("right", c("B3 MPR","B3 Ext", "B2 EBL(Uma)"), fill=c("purple","blue","orange")

#1.0

plot(OPC\_2\_B3MPR[,4], xlab="Time", ylab="1.0um Count", col="purple",ylim=c(100,4000),xlim=c(0, 700), cex.lab=1.5)

points(OPC\_3\_B3Ext[,4], col="blue")

points(OPC\_4\_B2EBL\_Uma[,4], col="orange")

legend("right", c("B3 MPR","B3 Ext", "B2 EBL(Uma)"), fill=c("purple","blue","orange"))

#10.0

plot(OPC\_2\_B3MPR[,7], xlab="Time", ylab="10.0um Count", col="purple",ylim=c(0,550),xlim=c(0, 700), cex.lab=1.5)

points(OPC\_3\_B3Ext[,7], col="blue")

points(OPC\_4\_B2EBL\_Uma[,7], col="orange")

legend("right", c("B3 MPR","B3 Ext", "B2 EBL(Uma)"), fill=c("purple","blue","orange"))

##boxplot code

par(mfrow=c(3,2),mar=c(5, 5, 2, 2) + 0.1) #it goes c(bottom, left, top, right)

#title("OPC Data", outer = TRUE, cex = 1)

#0.3

boxplot(OPC\_4\_B2EBL\_Uma[,2], OPC\_2\_B3MPR[,2], OPC\_3\_B3Ext[,2], names=c("B2 EBL (Uma)", "B3 MPR", "B3 Ext"), ylab="0.3um Count", cex.axis=1.2, cex.lab=1.5)

#2.0

boxplot(OPC\_4\_B2EBL\_Uma[,5], OPC\_2\_B3MPR[,5], OPC\_3\_B3Ext[,5], names=c("B2 EBL (Uma)", "B3 MPR", "B3 Ext"), ylab="2.0um Count", cex.axis=1.2, cex.lab=1.5)

#0.5

boxplot(OPC\_4\_B2EBL\_Uma[,3], OPC\_2\_B3MPR[,3], OPC\_3\_B3Ext[,3], names=c("B2 EBL (Uma)", "B3 MPR", "B3 Ext"), ylab="0.5um Count", cex.axis=1.2, cex.lab=1.5)

#5.0

boxplot(OPC\_4\_B2EBL\_Uma[,6], OPC\_2\_B3MPR[,6], OPC\_3\_B3Ext[,6], names=c("B2 EBL (Uma)", "B3 MPR", "B3 Ext"), ylab="5.0um Count", cex.axis=1.2, cex.lab=1.5)

#1.0

boxplot(OPC\_4\_B2EBL\_Uma[,4], OPC\_2\_B3MPR[,4], OPC\_3\_B3Ext[,4], names=c("B2 EBL (Uma)", "B3 MPR", "B3 Ext"), ylab="1.0um Count", cex.axis=1.2, cex.lab=1.5)

#10.0

boxplot(OPC\_4\_B2EBL\_Uma[,7], OPC\_2\_B3MPR[,7], OPC\_3\_B3Ext[,7], names=c("B2 EBL (Uma)", "B3 MPR", "B3 Ext"), ylab="10.0um Count", cex.axis=1.2, cex.lab=1.5)