Luminex Xponent: Plate- level Quality Control

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2024-04-04

Aim

This code aims to do a plate- level quality control analysis. It screens for the minimum bead count and displays the log10(MFI) plot of the standard dilutions and BSA.

R Markdown

This is an R Markdown document, areas that between the **{r}** frames that are **open** require manual entries as described in the **bolded text** . When entries are completed, press the *knit* button at the top of the page.

Confirm working directory

This is the project folder where the data is found. If needed you can set the working directory using the *setwd()* function.

```
## [1] "/Users/sahal/Documents/R Projects/RTSS_Kisumu_Schisto"
```

Choose file

Chose the raw plate file from working directory by pasting the **file path** (in the quotes). Ideally, this is placed in the "Project/data/raw/luminex/" folder as seen below.

```
# Input file path
input_file <- "/Users/sahal/Documents/R Projects/RTSS_Kisumu_Schisto/data/raw/luminex/Ahero_IgG1_Test.cs
```

Quality Control

Bead count

Set the **minimum bead count** as *min_beadcount*. Note that the standard we have set here is 50. All bead counts <50 will termed "Low". A csv with the well- analyte bead counts will be exported in the "Project/data/qc" folder as *PlateName_beadqc_df.csv*

```
# Minimum bead count for analysis
min_beadcount <- 50
```

```
## The bead QC report has been exported to /Users/sahal/Documents/R Projects/RTSS_Kisumu_Schisto/data/qc
```

List of wells/analytes <50 beads

This code results in a list of wells, sample IDs, and analytes that are less than the minimum bead count set. This file is exported to "Project/data/qc" folder as *PlateName_beadqc_list.csv*.

```
## The bead QC list has been exported to /Users/sahal/Documents/R Projects/RTSS_Kisumu_Schisto/data/qc/
```

```
##    Location                 Sample Column
## 1  30(1,F4)           RAC-007-T07   pp65
## 2 78(1,F10)              HCAM-001    BSA
## 3  16(1,H2) African-Mix-Standard7   MSP1
## 4  20(1,D3)           RAC-001-T01 CelTos
## 5  24(1,H3)           RAC-002-T08 CelTos
## 6  27(1,C4)           RAC-005-T08 CelTos
## 7  11(1,C2) African-Mix-Standard2    CSP
## 8  60(1,D8)               RAM-016    CSP
```