Concordance Test Report

PROJECT NAME	Psomagen Concordance Test
STATISTICAL SERVICE	Generated by Olink® Concordance Test app (v. 6.0)
REPRESENTATIVE	support@olink.com
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Overview

An Olink® Concordance Test was performed to assess the performance between labs. The Olink® Concordance Test (batch 1017463 (B2)) comprised 48 samples, ran on Reveal at both Psomagen and Analysis Service Boston. To assess the performance between the sites, Olink® Concordance Test compared CV, correlation and regression. After evaluation of the results, Psomagen **passed the Concordance Test**.

QC Warning

The number and percentage of samples with QC warning status was calculated and summarized in Table 1.

Table 1: The number and (percentage) of samples with a QC warning per site.

Site	Warnings
Analysis Service Boston	0 (0)
Psomagen	0 (0)

PCA

Scatter plots along the first two principal components were generated to compare global data performance (Figure 1). Figure 1 displays PCA plots of Analysis Service Boston and Psomagen data separately.

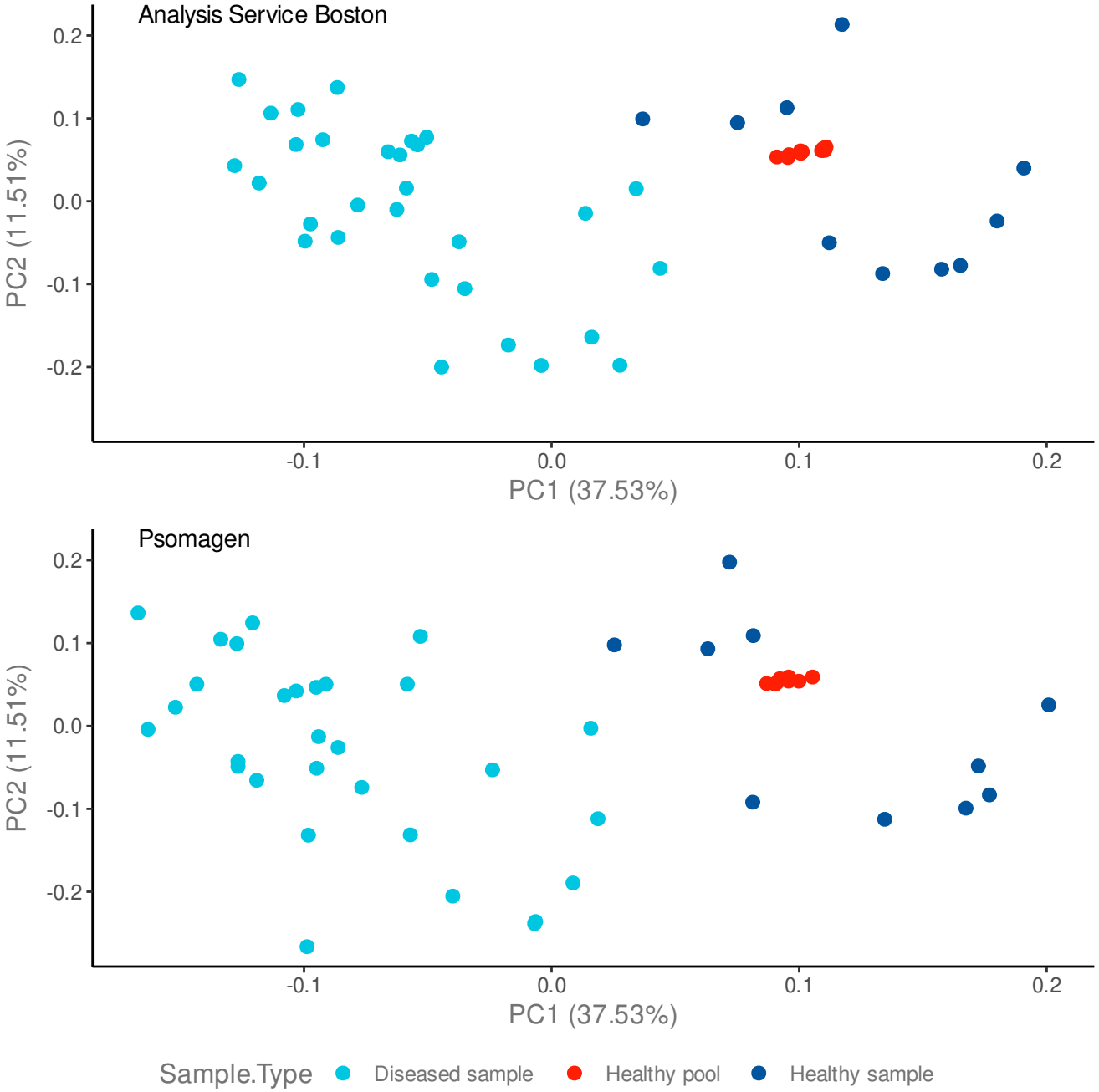

Figure 1: Separated PCA plots of data from Analysis Service Boston and Psomagen, colored by sample type. Each point represents one sample. The position of the point is based on all measured protein values. The percentages displayed show the percentage of explained variance per principal component.

Coefficient of Variation

The coefficient of variance (CV) was calculated on a per assay basis, using the control samples that were included in each run (Table 2). Intra CV less than 15.0% is preferred.

Table 2: Average intra CV by site (%).

Panel	Analysis Service Boston	Psomagen
Reveal	8	6.7

Correlation

Correlation of NPX values between Analysis Service Boston and Psomagen were calculated on a per assay basis (Figure 2).

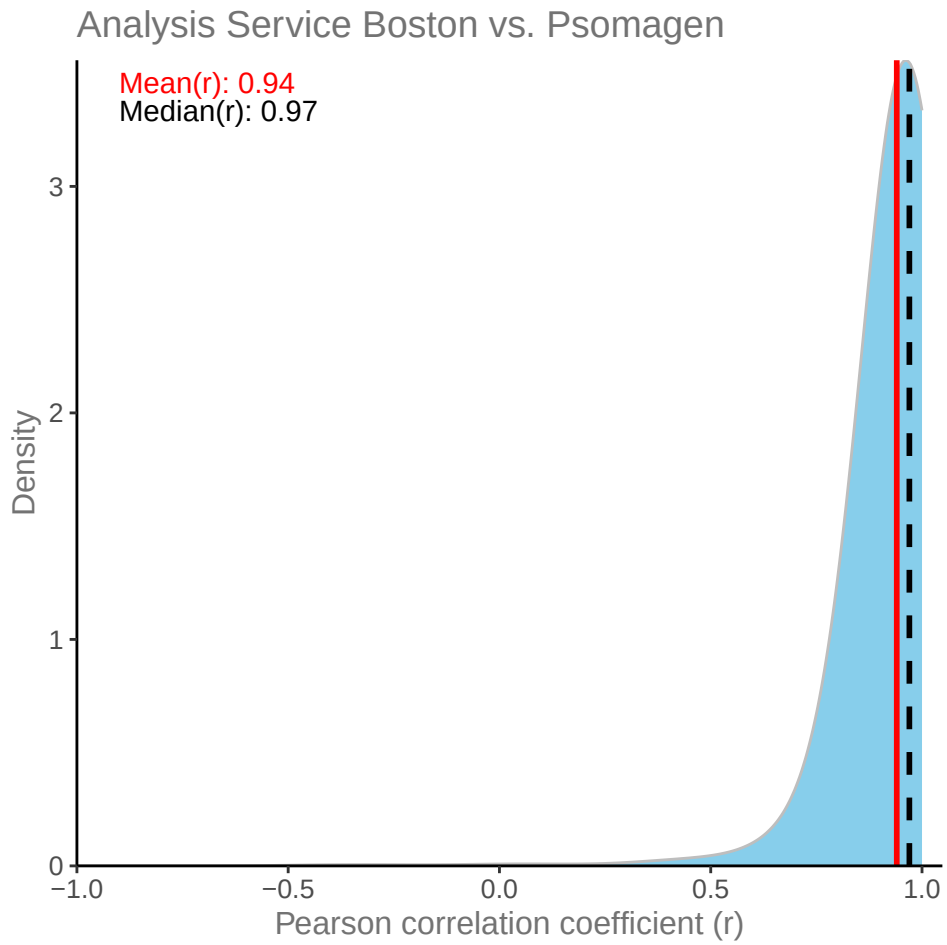

Figure 2: Density plot of Pearson correlation coefficients between two sites. The solid red line represents the mean of the correlation coefficients, serving as a central reference point, while the dashed black line indicates the median, providing insight into the distribution's central position. This figure provides a powerful tool for understanding complex interdependencies within the dataset, facilitating the identification of underlying patterns and trends in variable relationships.

Regression

Figure 3 shows the NPX values from Analysis Service Boston on the x-axis and from Psomagen on the y-axis. The regression line is fitted using a linear model.

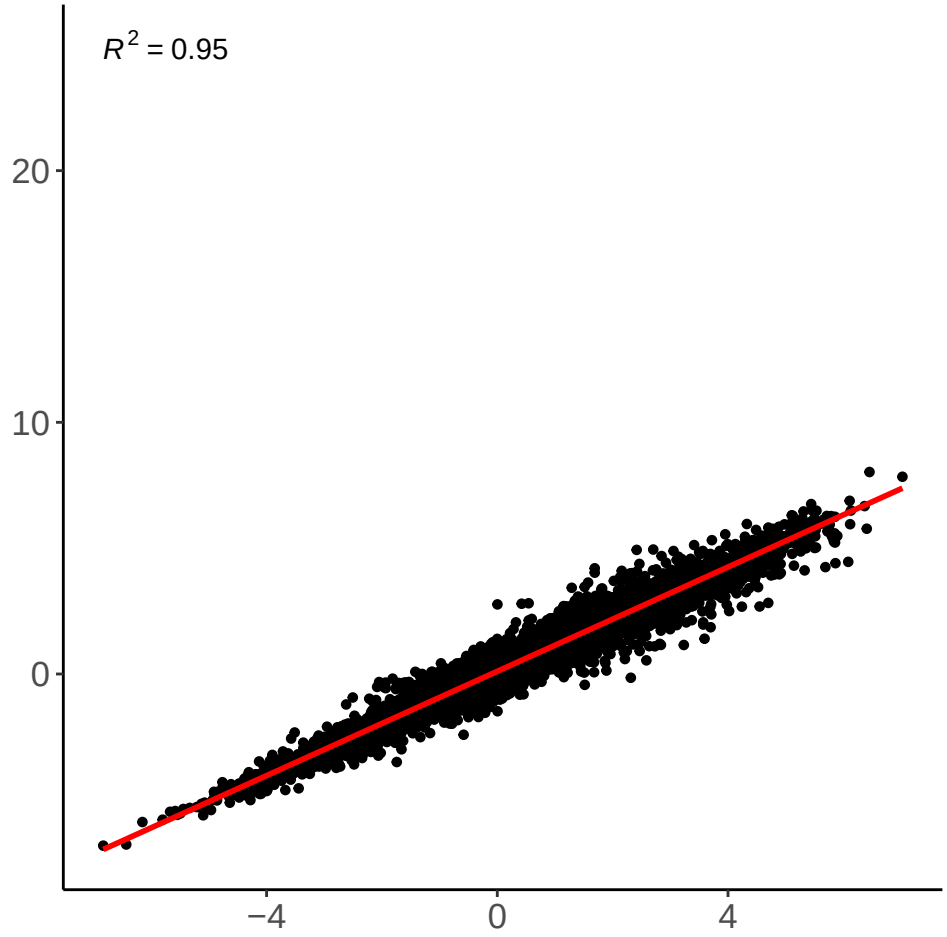

Figure 3: Scatter plot of data from both sites with a regression line fitted to present the linear relationship between two sites. In addition to the best-fit line, the figure includes the R-squared (R^2) value, which quantifies the goodness of fit of the regression model.

Summary

CV, correlation and regression analysis were performed to compare the concordance of data generated with the same set of samples at Analysis Service Boston and Psomagen.

Psomagen had 0 % QC warnings (maximum 16 % allowed). Hence, **passing** the QC warning criteria.

Psomagen scored 6.7 % intra CV (maximum 15.0 % allowed). Hence, **passing** the CV criteria.

Both mean (0.94) and median (0.97) correlation coefficient (r) of Psomagen vs. Analysis Service Boston scored more than the minimum allowed value (0.85). Hence, **passing** the correlation criteria.

Psomagen scored a coefficient of determination (R^2) of 10000.00 (minimum 0.87 allowed). Hence, **passing** the regression criteria.

In total, Psomagen failed 0 QC criterias (maximum 1 fail allowed). Hence, **passing the Concordance Test**.

Appendix

R Session Information

- R version 4.4.2 (2024-10-31), `x86_64-pc-linux-gnu`
- Locale: `LC_CTYPE=en_US.UTF-8`, `LC_NUMERIC=C`, `LC_TIME=en_US.UTF-8`, `LC_COLLATE=en_US.UTF-8`, `LC_MONETARY=en_US.UTF-8`, `LC_MESSAGES=en_US.UTF-8`, `LC_PAPER=en_US.UTF-8`, `LC_NAME=C`, `LC_ADDRESS=C`, `LC_TELEPHONE=C`, `LC_MEASUREMENT=en_US.UTF-8`, `LC_IDENTIFICATION=C`
- Time zone: `America/New_York`
- TZcode source: `system (glibc)`
- Running under: `Ubuntu 20.04.6 LTS`
- Matrix products: default
- BLAS: `/usr/lib/x86_64-linux-gnu/blas/libblas.so.3.9.0`
- LAPACK: `/usr/lib/x86_64-linux-gnu/lapack/liblapack.so.3.9.0`
- Base packages: base, datasets, graphics, grDevices, methods, stats, utils
- Other packages: cicerone 1.0.4, Concordance 0.0.0.9000, dplyr 1.1.4, DT 0.34.0, extrafont 0.20, forcats 1.0.1, ggplot2 4.0.1, ggpubr 0.6.2, gtsummary 2.4.0, kableExtra 1.4.0, knitr 1.50, lubridate 1.9.4, OlinkAnalyze 4.3.2, plotly 4.11.0, purrr 1.2.0, readr 2.1.6, readxl 1.4.5, shiny 1.11.1, shinycssloaders 1.1.0, stringr 1.6.0, tibble 3.3.0, tidyr 1.3.1, tidyverse 2.0.0
- Loaded via a namespace (and not attached): abind 1.4-8, arrow 22.0.0, assertthat 0.2.1, attempt 0.3.1, backports 1.5.0, base64enc 0.1-3, bit 4.6.0, bit64 4.6.0-1, broom 1.0.10, bslib 0.9.0, ca 0.71.1, cachem 1.1.0, car 3.1-3, carData 3.0-5, cellranger 1.1.0, cli 3.6.5, codetools 0.2-20, compiler 4.4.2, config 0.3.2, cowplot 1.2.0, crosstalk 1.2.2, data.table 1.17.8, dendextend 1.19.1, desc 1.4.3, digest 0.6.38, emmeans 2.0.0, estimability 1.5.1, evaluate 1.0.5, extrafontdb 1.1, farver 2.1.2, fastmap 1.2.0, fontawesome 0.5.3, foreach 1.5.2, Formula 1.2-5, fs 1.6.6, generics 0.1.4, ggrepel 0.9.6, ggsignif 0.6.4, glue 1.8.0, golem 0.5.1, grid 4.4.2, gridExtra 2.3, gtable 0.3.6, heatmaply 1.6.0, hms 1.1.4, htmltools 0.5.8.1, htmlwidgets 1.6.4, httpuv 1.6.16, httr 1.4.7, iterators 1.0.14, jquerylib 0.1.4, jsonlite 2.0.0, labeling 0.4.3, later 1.4.4, lattice 0.22-7, lazyeval 0.2.2, lifecycle 1.0.4, magrittr 2.0.4, Matrix 1.7-4, memoise 2.0.1, mgcv 1.9-4, mime 0.13, mvtnorm 1.3-3, nlme 3.1-168, npxexplorer 9.0.0, otel 0.2.0, pillar 1.11.1, pkgbuild 1.4.8, pkgconfig 2.0.3, pkgload 1.4.1, plyr 1.8.9, polynom 1.4-1, promises 1.5.0, R.methodsS3 1.8.2, R.oo 1.27.1, R.utils 2.13.0, R6 2.6.1, RColorBrewer 1.1-3, Rcpp 1.1.0, registry 0.5-1, repr 1.1.7, rlang 1.1.6, rmarkdown 2.30, rprojroot 2.1.1, rstatix 0.7.3, rstudioapi 0.17.1, Rttf2pt1 1.3.14, S7 0.2.1, sass 0.4.10, scales 1.4.0, seriation 1.5.8, shinyalert 3.1.0, shinyjs 2.1.0, shinythemes 1.2.0, shinyWidgets 0.9.0, skimr 2.2.1, splines 4.4.2, stringi 1.8.7, svglite 2.2.2, systemfonts 1.3.1, textshaping 1.0.4, tidyselect 1.2.1, timechange 0.3.0, tinytex 0.57, tools 4.4.2, TSP 1.2-5, tzdb 0.5.0, usethis 3.2.1, uuid 1.2-1, vctrs 0.6.5, viridis 0.6.5, viridisLite 0.4.2, webshot 0.5.5, withr 3.0.2, xfun 0.54, xml2 1.5.0, xtable 1.8-4, yaml 2.3.10, zip 2.3.3