

## **USING PLS TO UNDERSTAND POTENTIAL SOURCES OF PROCESS VARIATION & ASSESSING MEDIUM COMPONENTS TO ALTER AFUCOSYLATION**

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Understanding potential sources of process performance and product quality variation in a manufacturing process may benefit from the use of multivariate data analysis techniques. PLS analysis identified some potential sources of process performance variation. For products where antibody-dependent cell-mediated cytotoxicity (ADCC) is part of the mechanism of action, total afucosylated glycans (Afuc) variation may be important. This work was also directed at understanding current process variability for Afuc and the effect of process parameters that may vary during routine production. In addition, a series of small-scale experiments were conducted to screen several medium components for their ability to shift Afuc. Components studied included substrates and co-factors of enzymes involved in the relevant pathways (*de novo* and salvage production of GDP-fucose and fucosylation). Several medium components were shown to be effective for altering levels of Afuc, however the majority of these also resulted in a loss in productivity. Supplementing zinc (Zn) and cobalt (Co) to production culture medium reduced Afuc without negatively impacting process performance.