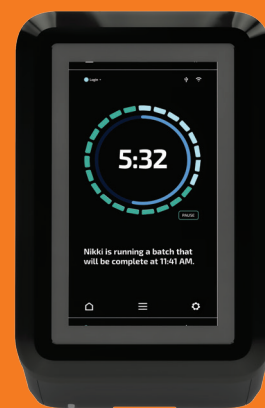


### Don't sweat your cell media additives when you run it on the Rebel.



#### BACKGROUND

Surfactants, antifoams, salts solutions, detergents, and buffers are commonly used in bioprocesses and fermentations to address a variety of needs. For instance, antifoams are widely used in bioreactors and shake flasks to counteract the unwanted foaming that may happen when gassing is performed to maintain a desired dissolved oxygen level. If foams are left to develop, they can cause sterilization concerns if the foam escapes the reactor vessel. Antifoam supplementation can eliminate this issue, but researchers must select an appropriate type so as not to impact cell growth or process yield negatively. Additionally, the use of antifoams and other additives may interfere with the chemical analysis of samples taken during the process. Additional sample cleanup and preparation may be required before analysis to ensure that some sensors and instrumentation will not foul or that the results are not biased with chemical interferences.

#### THE EXPERIMENT

Individual samples of fresh chemically-defined CHO media (without Gln) were prepared with seven different additives. These seven samples, along with an untreated (no additives) sample were diluted 100X with the Rebel diluent, placed into a vial and run immediately on the Rebel with no additional sample preparation. (Figure 1)

#### DISCUSSION

For the 19 amino acids present in the original chemically-defined CHO media, there were very minor effects on the reported values measured by the Rebel.

Across the seven cell media additives, the essential amino acid Met and non-essential amino acid Gly had the most significant average concentration deviations from the control (no additives) media formulation of only 5% and 6%, respectively. These small measurement deviations from the original media demonstrate that with these types of additives, the Rebel does not need any kind of extraction or sample clean up steps before analysis. The lack of additional preparation maintains a fast turnaround time and keeps the analysis simple for engineers.

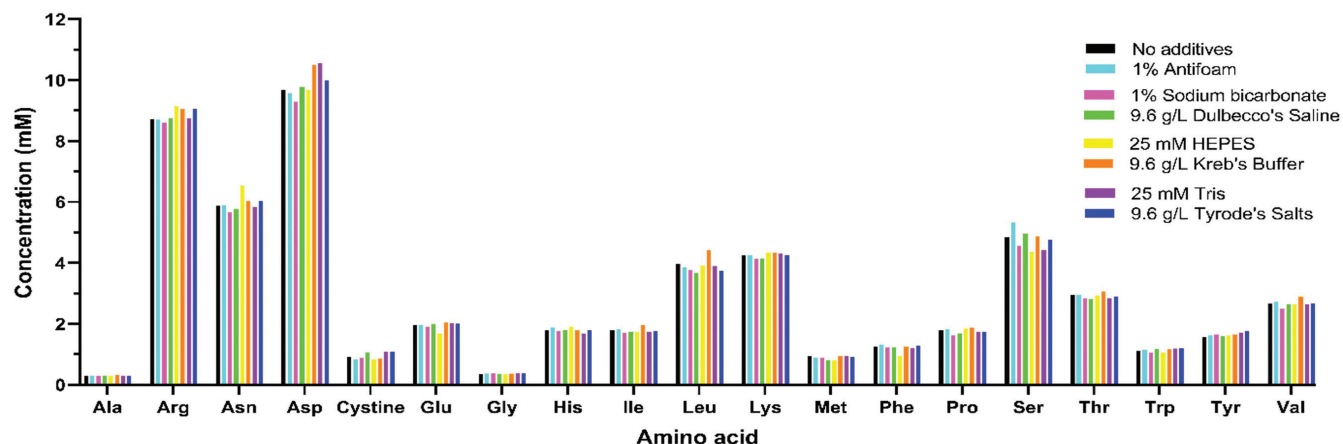


Figure 1: Amino acid concentrations from chemically-defined CHO media in the presence of various common additives.

