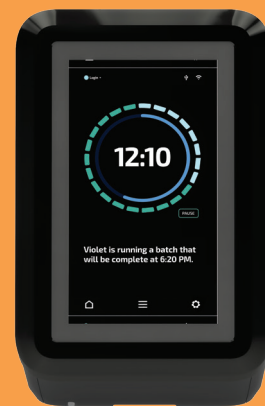


How comparable are different vendors' LB media?



BACKGROUND

Lysogeny broth (LB) is one of the most popular media used for growing bacteria, especially recombinant strains of *E. coli*. Formulations of LB media contain a mix of salts, tryptone, and yeast extract to provide the essential nutrients like trace minerals, vitamins, and amino acids. For *E. coli* cultures, LB media is usually used to support cloning, and the production of plasmid DNA, DNA, and recombinant proteins. Common additives to LB media include antibiotics for selective cultivations and agar for plate cultures. Due to its broad usage, LB media can be purchased in liquid or dry powder mix from many vendors. Still, each vendor's source of the individual components of the media may differ. This variance could change the concentrations of individual components in the media, which may affect the culture's growth rates.

THE EXPERIMENT

All commercially available LB-Miller liquid media was tested fresh, and handled following the manufacturer's instructions. All samples were diluted 250x before analysis on the REBEL with no additional sample preparation. (Figure 1)

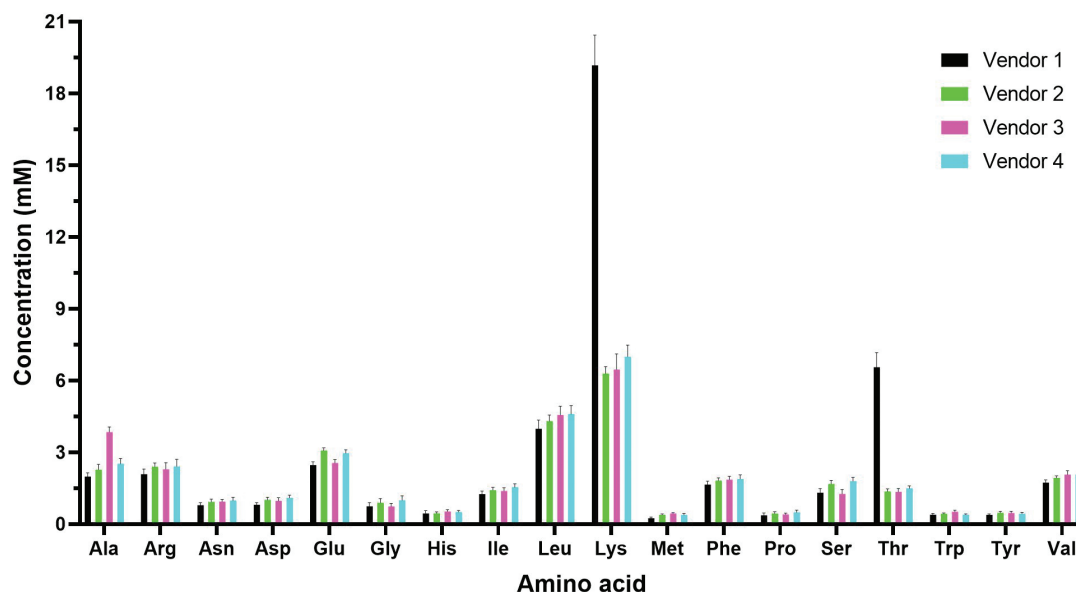


Figure 1: Amino acid concentrations from LB media diluted by 250x before analysis. Error bars are from the standard deviation of n = 5 replicates.

DISCUSSION

All but three amino acids had very comparable concentrations across all four vendors. The three amino acids that displayed large deviations were alanine, lysine, and threonine. For alanine, vendor 3 reported a 68% higher concentration than the average of vendors 1, 2, and 4. There was a 190% higher value for lysine detected in vendor 1 compared to the average concentration in vendors 2, 3, and 4. Additionally, vendor 1 had the highest concentration of threonine, which was 360% higher than the average of vendors 2, 3, and 4. Due to the high variation in some amino acids, it would be wise to routinely check fresh media formulations of LB media. Using the REBEL to quickly screen different vendor's LB media may support reproducible cultures and media preparations for bacterial cultures.

