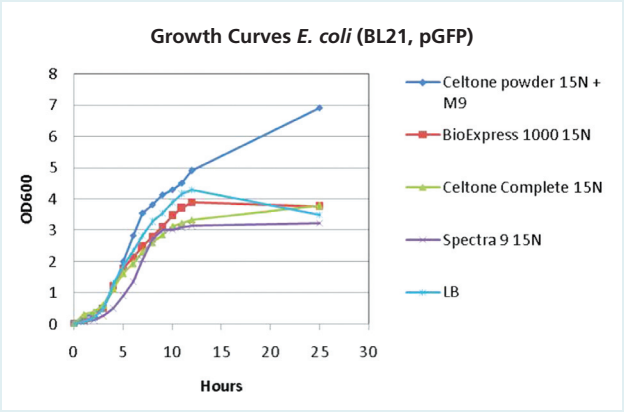
Rich *E. coli* Media

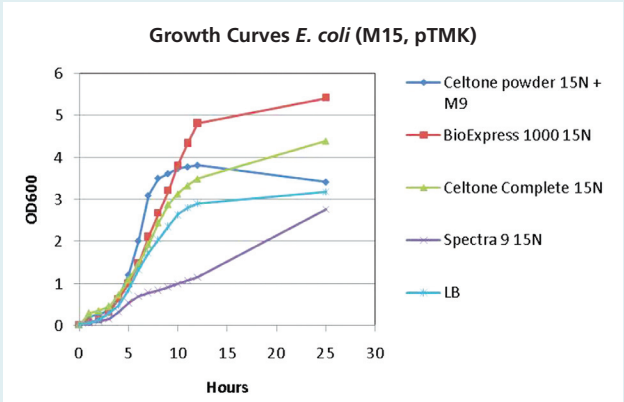
Stable isotope-labeled cellular biomass can be used in both proteomic and metabolomic investigations. In addition, quantitative proteomic MS-based studies can benefit greatly from the use of purified, labeled intact protein as internal standards. The use of properly folded, labeled intact proteins are ideal internal standards because they mimic the physical and chemical properties of the target endogenous protein in a sample prior to, during and after digestion. In particular, they undergo a similar degree of proteolytic cleavage as the unlabeled counterpart, thus improving the accuracy of the IDMS experimental result for both middle-down or bottom-up methodologies.

BioExpress® 1000

BioExpress® 1000 is CIL's all-time classic rich bacterial cell growth medium. BioExpress® 1000 provides excellent growth and expression characteristics for a number of different bacterial systems. BioExpress® 1000 contains nearly the same level of amino acids as LB medium. Glucose levels range from 0.1-0.5 g/L, depending on the batch. BioExpress® 1000 media is prepared by adding sterile cell culture-grade water and mixing. Please note that D_2O is required for reconstitution for products containing deuterium. BioExpress® 1000 is supplied as a 100 mL sterile liquid 10x concentrate, and reconstitutes to 1 L with no final pH adjustment required; 10 mL sample sizes are also available. The 10 mL sample size reconstitutes to make 100 mL of media with no final pH adjustment required.

Please see page 139 of the Mass Spectrometry catalog for a complete listing of BioExpress® 1000 products.





"In our hands, CIL's BioExpress® 1000 worked like a charm. The cell growth rate and protein expression level essentially matched the results obtained with Luria broth, and the ^{15}N labeling efficiency was excellent."

Tero Pihlajamaa, PhD
Finnish Biological NMR Center
Institute of Biotechnology
University of Helsinki, Finland

Stable isotope-labeled intact proteins

Please contact CIL for additional information.

(continued)

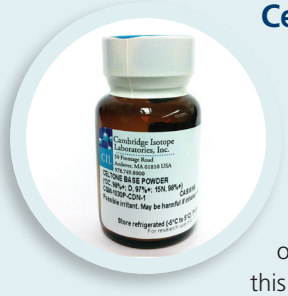
Rich *E. coli* Media

Although growth in minimal media is economical, there is no substitute for the enhanced growth rates and increased levels of protein expression that may be gained by the use of a rich medium. Rich bacterial media are complex formulations that are usually derived from algal hydrolysates and contain all the necessary nutrients to promote excellent growth. CIL offers a number of rich media used in labeled protein expression using bacterial systems.

For pointers on how to maximize protein yield using CIL's BioExpress® 1000 media, please see CIL Application Note 15 at www.isotope.com. Please see CIL Application Note 12 to learn how spiking BioExpress® 1000 media into minimal media provides a low-cost means to enhance the performance of minimal media.

Celtone® Complete

Celtone® Complete yields a growth rate comparable to LB media, allowing for inoculation and induction within one working day. Glucose levels range from ~0.3 to 0.6 g/L, depending on the batch. Celtone® Complete is a ready-to-use medium that does not require dilution or pH adjustment. Each lot is tested for sterility, cell growth and protein expression. Celtone® Complete is available in 0.1 L and 1 L sizes. **Please see page 139 of the Mass Spectrometry catalog for a complete listing of Celtone® Complete products.**



Celtone® Powder

Celtone® Powder is CIL's most flexible nutrient-rich media. The advantage of Celtone® Powder is that researchers can formulate a custom medium based on their specific research needs. Depending on cell line and desired performance, this powdered media can be used at concentrations ranging from 1 g to 10 g per liter. Truly exceptional performance has been achieved using 10 g of Celtone® Powder in 1 L of medium containing M9 salts, 2-3 g/L of glucose and 1 g of ammonium chloride (see graph).

Because it is a powder, this product has the longest shelf life of any fully rich bacterial cell growth medium. Please note that if deuterium labeling is desired, D_2O must be used in media preparation. Also note that it is normal to have insoluble material present after dissolution. This material may be removed using filter paper prior to sterile filtration and will not affect performance of the medium. Celtone® Powder is available in 0.5 g and 1 g packaged sizes. **Please see page 139 of the Mass Spectrometry catalog for a complete listing of Celtone® Powder products.**

Celtone® is a registered trademark of Cambridge Isotope Laboratories, Inc.

Spectra 9 Media

Spectra 9 Media is not a fully rich medium, however, it represents a cost-effective medium for *E. coli* growth and protein expression. It is comprised of labeled salts, labeled carbohydrates (>2 g glucose/L), and is supplemented with Celtone® Powder at a concentration of 1 g/L. **Please see page 139 of the Mass Spectrometry catalog for a complete listing of Spectra 9 Media products.**