

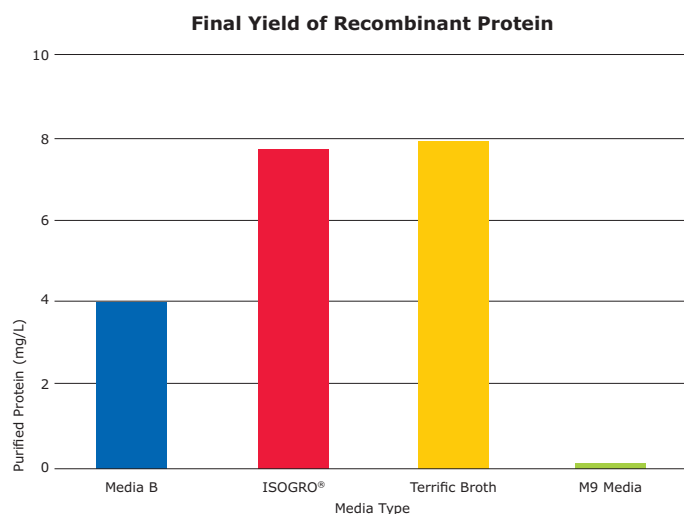
ISOGRO® Complex Growth Media

Produce ^{13}C , ^{15}N and D Labeled Proteins

A. Performance Surpasses the Competition as a Stand-alone Media

- Improve recombinant protein yields up to 80% compared to commercially available complex growth media "B".
- Substantially increase recombinant protein expression levels using ISOGRO® vs. M9 media.
- Save time by using ISOGRO® growth media to shorten production time.
- Express recalcitrant proteins to obtain high resolution NMR structural data.

For optimal results as a stand-alone media, incorporate 10g of ISOGRO® per liter of culture.



Data provided by Dr. Ross Overman and Dr. Kevin Embry, AstraZeneca, U.K.

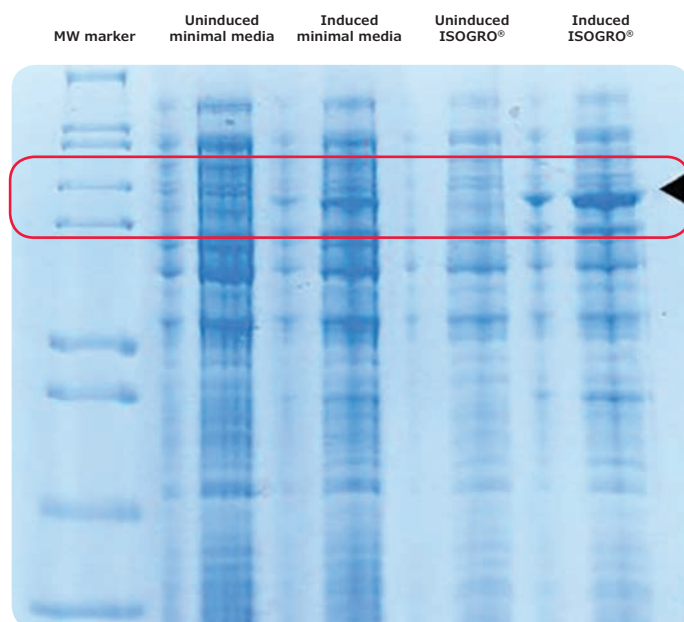
Figure 1.

The final yield of purified recombinant protein derived from each liter of culture.

Find detailed ISOGRO® protocols and references along with additional Biomolecular NMR resources at [SigmaAldrich.com/bionmr](https://www.sigmaaldrich.com/bionmr)

Description	Isotopic Purity	Cat. No.
ISOGRO®- ^{13}C Powder-Growth Medium	99 atom % ^{13}C	606863
ISOGRO®-D Powder-Growth Medium	97 atom % D	616729
ISOGRO®- ^{15}N Powder-Growth Medium	98 atom % ^{15}N	606871
ISOGRO®- ^{13}C , ^{15}N Powder-Growth Medium	99 atom % ^{13}C 98 atom % ^{15}N	606839
ISOGRO®- ^{15}N , D Powder-Growth Medium	98 atom % ^{15}N 97 atom % D	608300
ISOGRO®- ^{13}C , ^{15}N , D Powder-Growth Medium	99 atom % ^{13}C 98 atom % ^{15}N 97 atom % D	608297

A 39 μM sample of p38 alpha was produced from 50 mL of culture as seen below:



Data provided by Dr. Jeffrey W. Peng, Dept. of Chem/Biochemistry, Univ. of Notre Dame, Notre Dame, Indiana

Figure 2.

SDS-PAGE of p38 growth.

B. Supplement M9 Media with ISOGRO® for Enhanced Protein Expression

- Decrease lag time by as much as 60%.
- Maximize OD and recombinant protein expression.
- Supplement M9 media with as little as 1 gram of ISOGRO® per liter of culture and improve the production of difficult-to-express proteins in *E. coli*.
- As a standard quality control measure, the suitability of each batch of ISOGRO® as a culture medium is determined by comparison with an LB growth curve.

ISOGRO® Analytical Information

(Approximate values – there may be some variation between batches)

Composition

Salts	30%	Glucose	2%
Water	3%	Amino acids/Peptides	65%

Amino Acid Analysis

Ala	13%	Lys	6%
Arg	3%	Met	3%
Asp	14%	Phe	4%
Glu	10%	Pro	4%
Gly	12%	Ser	4%
His	1%	Thr	5%
Ile	4%	Tyr	3%
Leu	8%	Val	6%

For more information on these services or to request a custom quote, contact:

Stable Isotopes Customer Service

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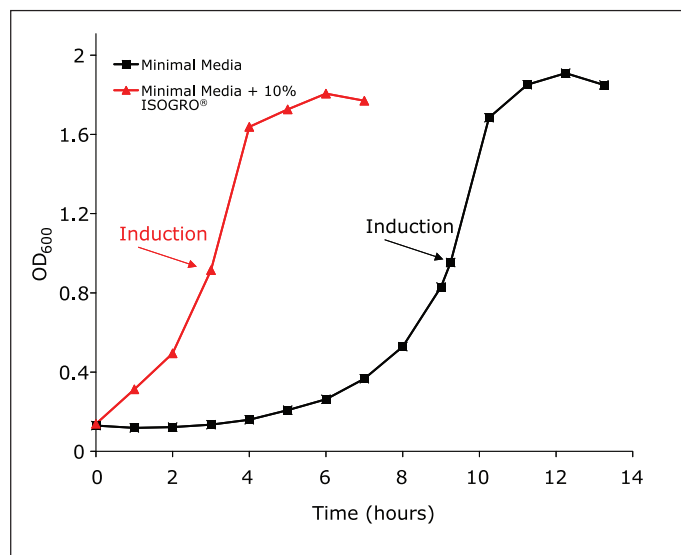
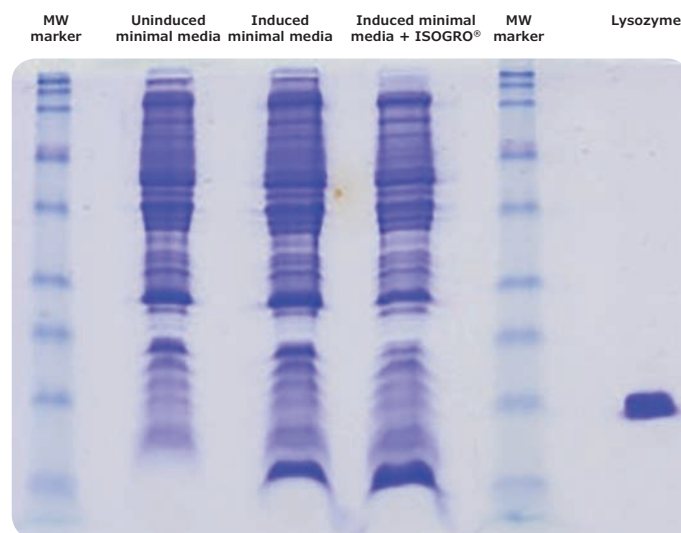


Figure 3.

Cardiac troponin cTnI(1-89) in pLysS. Cells grown at 37°C in shaker flasks. Red curve is ISOGRO® supplemented minimal media and black curve is minimal media alone.



Data provided by Dr. Paul R. Rosevear, The Department of Molecular Genetics, Biochemistry and Microbiology, University of Cincinnati Medical Center, Cincinnati, OH.

Figure 4.

SDS-PAGE cTnI(1-89) cell lysates.

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