ISOTEC® Stable Isotopes

Amplify Recombinant Protein Expression with ISOGRO®

- Decrease lag time by as much as 60%.
- Maximize OD and recombinant protein expression.
- Supplement with as little as 10% ISOGRO and improve the production of difficult to express proteins in *E. coli.*

Cat. No.	Description	Isotopic Purity
606863	ISOGRO-^{13}C Powder-Growth Medium	99 atom % ^{13}C
616729	ISOGRO-D Powder-Growth Medium	97 atom % D
606871	ISOGRO-^{15}N Powder-Growth Medium	98 atom % ^{15}N
606839	ISOGRO-^{13}C,^{15}N Powder-Growth Medium	99 atom % ^{13}C 98 atom % ^{15}N
608300	ISOGRO-^{15}N,D Powder-Growth Medium	98 atom % ^{15}N 97 atom % D
608297	ISOGRO-^{13}C,^{15}N,D Powder-Growth Medium	99 atom % ^{13}C 98 atom % ^{15}N 97 atom % D
299251	Ammonium -^{15}N chloride	98 atom % ^{15}N
299286	Ammonium -$^{15}N_2$ sulfate	98 atom % ^{15}N
617385	Deuterium oxide	99.8 atom % D
552003	D-Glucose -1,2,3,4,5,6,6-d_7	97 atom % D
389374	D-Glucose-$^{13}C_6$	99 atom % ^{13}C
552151	D-Glucose-$^{13}C_6$-1,2,3,4,5,6,6-d_7	99 atom % ^{13}C 97 atom % D

For more information on ISOGRO, related products, and procedural information visit *sigma-aldrich.com/bionmr*

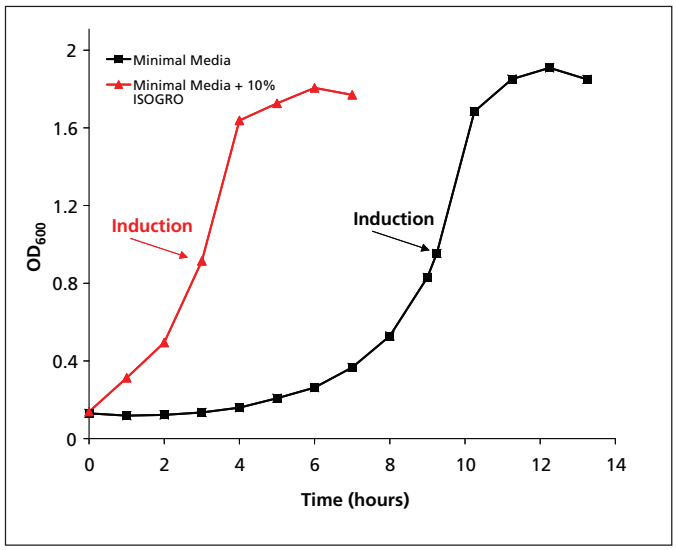

Figure 1. Cardiac troponin cTnC(1-89) in pLysS. Cells grown at 37 °C in shaker flasks. Red curve is ISOGRO supplemented minimal media and black curve is minimal media alone.

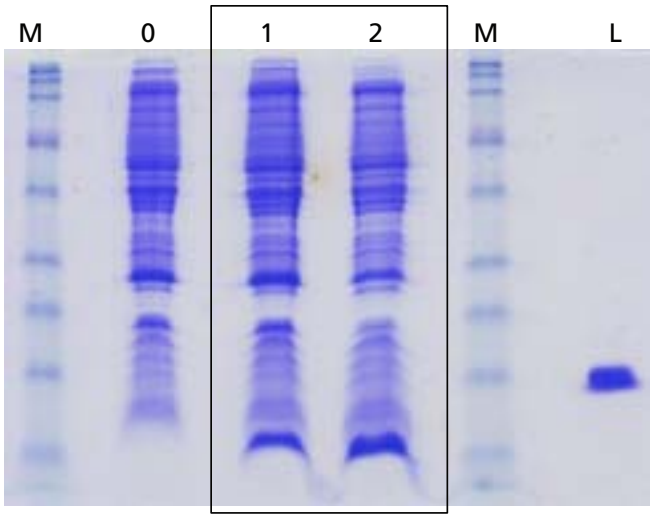

Figure 2. SDS-PAGE cTnC(1-89) cell lysates. M-low molecular weight marker; 0= uninduced; 1=induced minimal media; 2=induced minimal media + ISOGRO; L=Lysozyme. Data provided by Dr. Paul R. Rosevear The Department of Molecular Genetics, Biochemistry and Microbiology, University of Cincinnati Medical Center, Cincinnati, OH.

Interested in improving your efficiency and level of protein production?

Maximize recombinant protein yields with ISOGRO®

- Substantially increase recombinant protein expression levels using ISOGRO as a stand-alone media versus M9 media.
- Save time and money by using ISOGRO growth media to shorten production time.
- Stable isotope label sufficient amounts of protein to permit the achievement of high quality NMR spectra of difficult to express proteins.

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

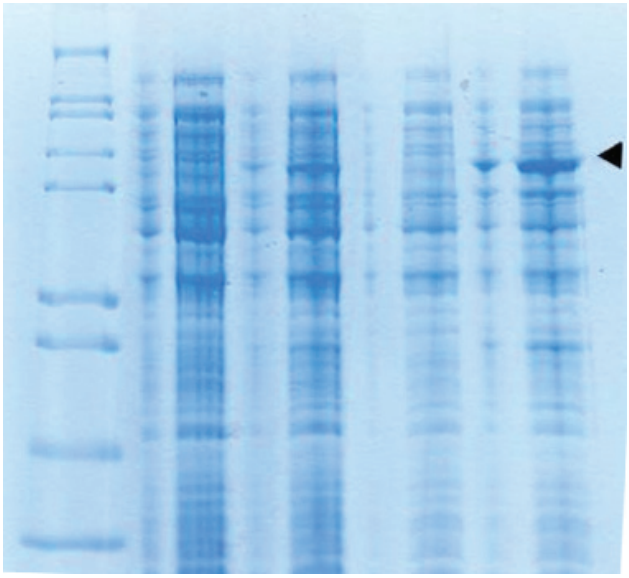

Figure 3. SDSPAGE of p38 growth. Left to right – Molecular weight marker, uninduced minimal media, induced minimal media, uninduced ISOGRO, induced ISOGRO; black arrow – p38 alpha.

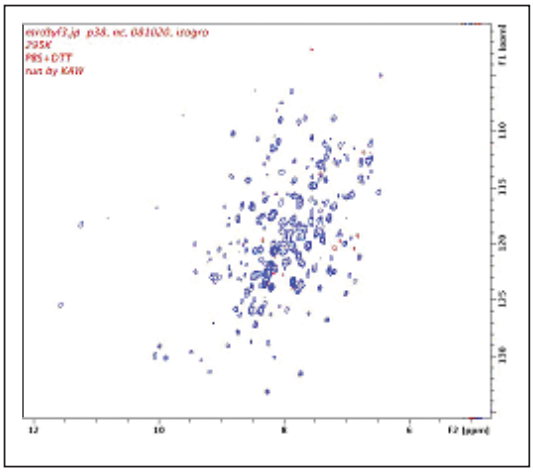

Figure 4. ^{1}H-^{15}N TROSY spectrum of [^{13}C,^{15}N] p38 alpha collected at 700 MHz. Data provided by Dr. Jeffrey W. Peng, Dept. of Chem/Biochemistry, Univ. of Notre Dame, Notre Dame, Indiana.

Literature of Interest:

Tang C, Schwieters CD, Clore GM. *Nature.* (2007) **449** (7165):1078-82.

Dam J, Baber J, Grishaev A, Malchiodi EL, Schuck P, Bax A, Mariuzza RA. *J Mol Biol.* (2006) **362** (1):102-13.

Chaney BA, Clark-Baldwin K, Dave V, Ma J, Rance M. *Biochemistry.* (2005) **44** (20): 7497-511.

For more information, please contact:

Stable Isotopes Technical Service

Phone: (800) 448-9760 (U.S. and Canada)
(937) 859-1808

Fax: (937) 859-4878

Email: isosales@sial.com

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