

IRVINE SCIENTIFIC

BALANCD™ CHO FEED 2

PRODUCT DESCRIPTION

BalanCD™ CHO Feed 2 is a chemically-defined feed medium designed to be added as a fed-batch supplement to promote cell growth and increase process yields of antibodies and recombinant proteins. BalanCD™ CHO Feed 2 improves productivity by providing essential cell culture nutrients such as glucose, amino acids and vitamins. This formulation was developed using Irvine Scientific's *Rational Culture Media Design*® strategy to overcome metabolic overflow which is frequently observed when supplementing richer growth media in fed-batch systems. The BalanCD™ CHO Feed 2 has been tested with three model cell lines (CHO-S, CHO-M, and CHO DHFR).

BalanCD™ CHO Feed 2 is comprised solely of animal component-free, chemically defined components, contains no antibiotics or antimycotics, and has proven stability in both powder and liquid formats.

BALANCD™ CHO FEED 2 CATALOG NUMBER

Powder	94121
Liquid	91129

PRODUCT HANDLING & STORAGE

Product handling using aseptic techniques is required to avoid contamination. Do not use if cloudy or if solution has precipitated. Powder product should be stored dry at 2-8°C and in absence of light for up to 2 years. Liquid product should be stored at 2-8°C and in absence of light for up to 6 months. Extended stability studies for both powder and liquid are ongoing for this formulation.

RELATED PRODUCTS

The following products are available from Irvine Scientific and developed for use in CHO fed-batch production systems. For additional information, please visit our website at www.irvinesci.com or call Customer Service at (800) 437-5706.

PRODUCT DESCRIPTION		CATALOG NUMBER
BalanCD™ CHO Growth A	Powder	94120
	Liquid	91128
BalanCD™ CHO Feed 1	Powder	94119
	Liquid	91127
BalanCD™ CHO Feed 3	Powder	94118
	Liquid	99471

INTENDED USE

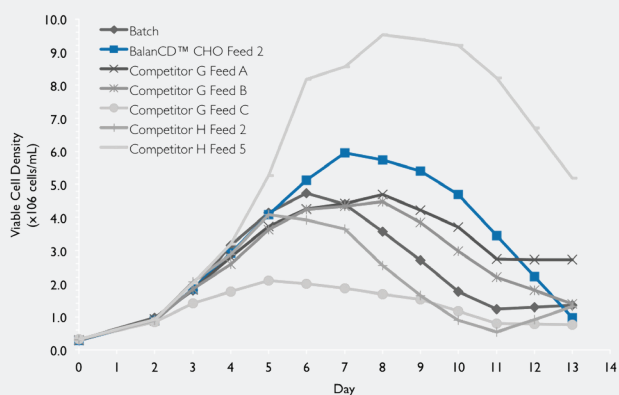
These products are for RESEARCH USE only and not approved for human or veterinary use, for application to humans or animals, or for use in clinical or in vitro procedures.

PERFORMANCE

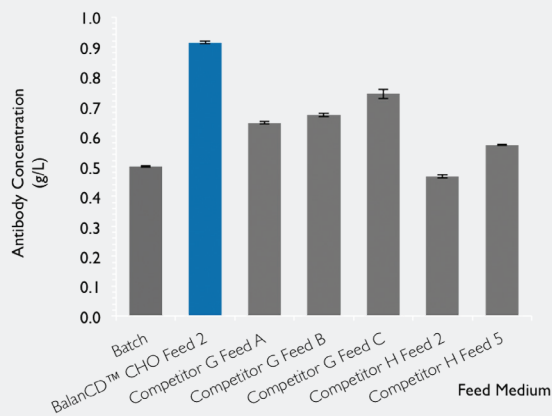
STUDY DESIGN

The study consisted of three model cell lines (CHO-S, CHO-M, and CHO DHFR) grown in fed-batch mode using a commercially available competitor growth media paired with a feed media (BalanCD™ CHO Feed 2 or one of several available commercial feeds) for comparative purposes. The following culture parameters and experimental conditions applied to all:

- 10% (v/v) bolus feeds on days 1, 3, and 5
 - Two (2) replicates per condition
 - Shake flask cultures at 37°C, 5% CO₂, 120rpm
- Antibody production was measured from samples taken on Day 13 and when viability <75%.

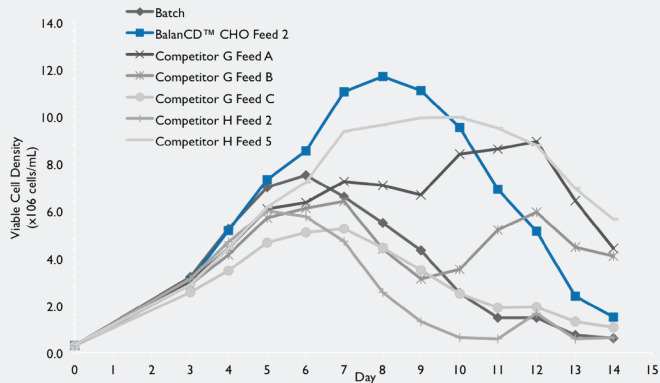


Graph 1. Fed-batch growth results with CHO-S model cell line.

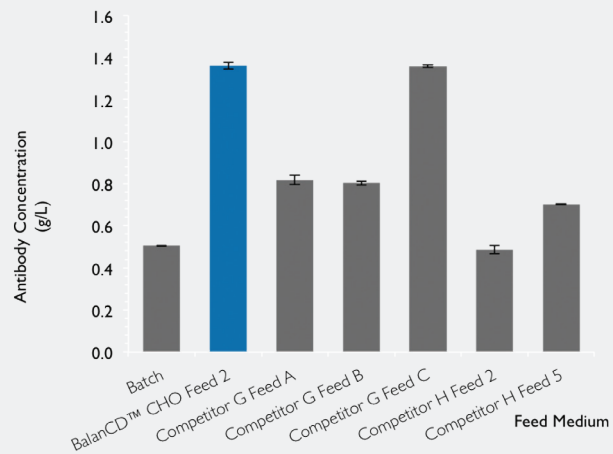


Graph 2. Antibody production in fed-batch with CHO-S model cell line.

RESULTS



Graph 3. Fed-batch growth results with CHO-M model cell line.



Graph 4. Antibody production in fed-batch with CHO-M model cell line.

CONCLUSION

Use of BalanCD™ CHO Feed 2 in fed-batch demonstrated higher growth and significantly improved antibody production when compared to either a standard batch culture or a comparable fed-batch system using any of the other commercially available feeds.

BalanCD™ CHO Feed 2 is a successful feed formulation that was designed to overcome metabolic overflow that is frequently observed when supplementing richer growth media that are often difficult to feed due to risk of metabolic waste accumulation.

FED-BATCH SYSTEMS

The fed-batch CHO production system is the basis for development and manufacture of numerous biological therapeutics and one of the most prevalent systems in bio-manufacturing today. The appeal of fed-batch can be attributed to industry advances in chemically-defined growth and feed media, the relative ease in scalability, and improved efficiencies (upstream and downstream) over a traditional batch culture system. Fed-batch production is also cost effective due to:

- Improved bioreactor engineering, mathematical modeling, and bioreactor control
- Higher product reactor residence time over batch systems
- Increased peak cell densities and net production
- Process development time and costs are generally less than that of perfusion systems.
- Personnel and process control requirements are also less than that of perfusion systems.

A common challenge with fed-batch production is the preparation, filtration, and sustained storage of feed formulations. Each of the BalanCD™ CHO feeds have proven stability in both liquid and powder formats and offer relative ease in handling and use.

HOW TO ORDER / CONTACT US

For additional information, please contact your Regional representative or call Customer Service at (800) 437-5706 or visit our website at www.irvinesci.com.



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