

BD Select™ CHO Medium 1X Liquid

Technical Guide

BD Select CHO Medium is a complete animal-free and serum-free ready-to-use formulation containing a plant hydrolysate for maximum productivity. This medium is formulated to support cell growth and production of antibodies and recombinant proteins in suspension CHO cell cultures. BD Select CHO Medium can be used in various culture vessels from T-flasks, shaker flasks, and roller bottles to spinners and bioreactors. BD Select CHO Medium can be used in research or manufacturing applications. This medium has been developed after careful screening of a wide variety of hydrolysates for increasing the protein yield in CHO cells.

This medium is appropriate for suspension CHO cells. BD Select CHO is also appropriate for a selection system such as Glutamine Synthetase (GS) which does not require selective pressure of Hypoxanthine/Thymidine (HT) deficient medium.

Specifications

- Animal-Free, Serum-Free
- Contains Human Recombinant Insulin
- Does not contain L-Glutamine; recommended supplementation: 4 mM
- Does not contain Pluronic® F-68; recommended supplementation: 0.1% w/v
- Does not contain phenol red
- Contains Hypoxanthine and Thymidine
- Low Endotoxin (≤ 5.0 EU/mL)
- pH: 7.1 +/- 0.2
- Osmolality: 330-370 mOsm/kg
- Clear, pale yellow solution

Product Handling

- Protect from exposure to light for maximum stability
- Store at 2-8°C (do not freeze)

Culture Recommendations

- Medium should be pre-warmed to culture temperature (37°C) before use to avoid any effect on growth due to the temperature variance
- Cells should be seeded at 5×10^5 cells/mL
- Cells should be maintained in logarithmic growth phase by subculturing every 2-3 days
- Cultures should be incubated at 37°C with 5% CO₂ or as required by the cell line



Product Description	Cat. No.
BD Select™ CHO Medium 1X Liquid	220253
Size: 1 L Bottles	
Custom sizes (in bags) available	

Adaptation of Cells into BD Select CHO Medium

This adaptation procedure describes how to transfer CHO cells into BD Select CHO Medium from their original growth medium. Some cells may readily adapt into the new medium whereas others may have more difficulty adjusting to the change in their culture environment. In addition, it can be more challenging and stressful for the cells to adapt if the culture system is changed at the same time. So it is recommended that the medium change is done first, followed by adaptation into the new growth system, if necessary.

BD Select CHO Medium performs best when cells are grown in an aerated system such as a roller bottle, a spinner, a shaker flask, etc., but cells can be adapted in a stationary system if desired. A T-flask or a small volume roller bottle for example would be easy to handle and uses minimal medium. Use of CO₂ is optional if using a closed (non-vented) system. When seeding the cells, it is best not to centrifuge off the current medium but take an aliquot from an existing culture and seed into the new medium. This enables cell-produced growth factors to assist the cells in adaptation to the new medium.



Helping all people
live healthy lives

Adaptation of Cells into BD Select™ CHO Medium

Direct Adaptation

A direct adaptation procedure can be used for cells that may readily adapt into the new medium. Dilute cells growing in current medium directly into BD Select CHO at 5.0×10^5 cells/mL during the logarithmic growth phase. **Cell centrifugation and total removal of current medium are not recommended to perform this step.** When viable cell density reaches $1.5 - 2.0 \times 10^6$ cells/mL or the culture is in mid- to late-logarithmic growth phase, subculture the cells again at 5.0×10^5 cells/mL. Repeat the subculturing at least three times every 3 to 4 days. If the viability goes below 80% during the procedure or if the cells do not retain their normal doubling time after four subcultures, adapt the cells sequentially as described below.

Sequential Adaptation

Complete adaptation from the old medium to BD Select CHO is achieved best in a four-step process when adapting sequentially. For each step, grow the cells in the media combination for at least three days until the cells reach mid-to-late exponential growth phase. If the culture shows longer doubling time, include additional cell passages at the media combination by following the same dilution procedure. Continue to passage the cells at least three times at current media combination for complete adaptation and growth kinetics. It is recommended to prepare a cell-bank at the 50% adapted step to provide for all contingencies.

Adaptation Step	Seeding Density	Culture Conditions	Criteria For Next Adaptation Step
25% Select CHO 75% Old Medium	5.0×10^5 cells/mL	Grow at least three days until the cells reach mid-to-late exponential growth phase.	Culture must retain normal doubling time and $\geq 90\%$ viability for three passages.
50% Select CHO 50% Old Medium	5.0×10^5 cells/mL	Grow at least three days until the cells reach mid-to-late exponential growth phase.	Culture must retain normal doubling time for three passages.
75% Select CHO 25% Old Medium	5.0×10^5 cells/mL	Grow at least three days until the cells reach mid-to-late exponential growth phase.	Culture must retain normal doubling time for three passages.
100% Select CHO	5.0×10^5 cells/mL	Allow for 3-4 passages at 100% Select CHO before creating cell banks and moving to the production system.	The cell culture is considered adapted only when it retains normal doubling time and a minimum of 90% viability over several cell passages.

Production can be monitored while the cells are being adapted; however, until the culture is placed in an aerated production system, the results will not be indicative of the true production performance of BD Select CHO Medium.

Figure 1: Growth of CHO cells in BD Select CHO Medium, in shaker flasks at 37°C with 5% CO₂. Viable cell density was measured by Vi-Cell™ Cell Viability Analyzer.

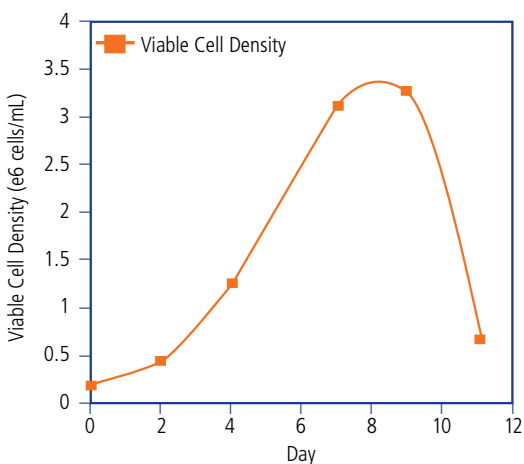
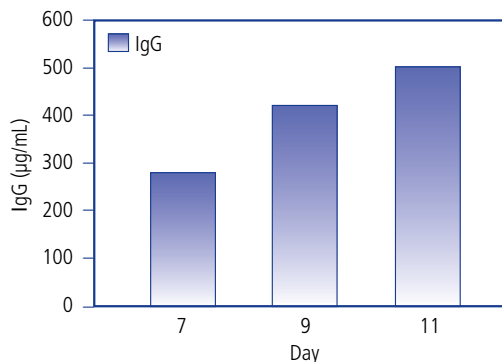


Figure 2: IgG Production of CHO cells grown in BD Select CHO Medium. Production was measured by Protein A analysis.



BD Biosciences
Advanced Bioprocessing
7 Loveton Circle
Sparks, MD 21152-0999
800.638.8663
bdbiosciences.com/advbio