

# Protein Hydrolysates For Cell Culture Applications

## Optimized Hydrolysate Mixture for CHO Cells

- Catalog Number 96850

## Ultrafiltered Soy Hydrolysate

- Catalog Number 96857

## Ultrafiltered Yeast Hydrolysate

- Catalog Number 96863

### Performance

By using carefully designed raw material testing and specifications, the consistency of hydrolysates is ensured. Hydrolysates are tested on a lot-by-lot basis for specific chemical parameters as well as performance in cell culture assays.

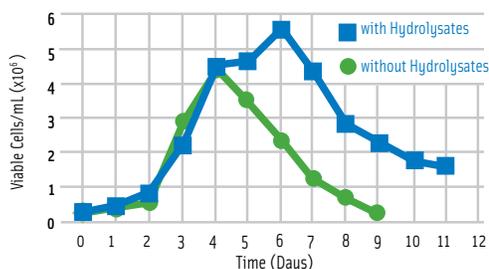
- Extensive research has been conducted using protein hydrolysates as a supplement to serum-free media for CHO cells. Figures 1-3 show significant improvement in growth and production with the addition of protein hydrolysates in CHO cell culture.
- Ultrafiltration of a hydrolysate solution effectively removes components above the specific molecular weight cut-off (MWCO) of the ultrafiltration membrane used. Since several of the issues related to the use of hydrolysates are linked to the presence of these various high molecular weight components, ultrafiltration can help resolve these issues:
  1. Endotoxin is effectively reduced.
  2. Residual proteins (including proteases - active or inactive) are removed.
  3. Consistency is enhanced by removal of variable high molecular weight components.
  4. Any high molecular weight contaminants or pathogens are removed.

### Suggested Instructions for Use

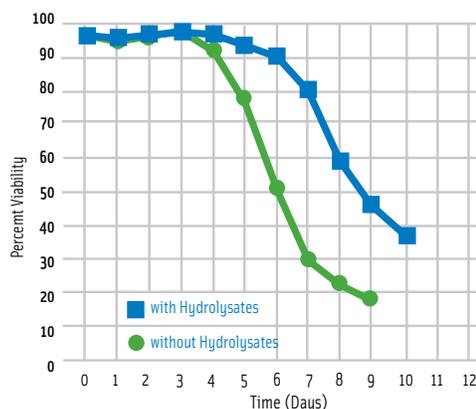
1. Add 2-6 grams of hydrolysate supplement to 1L of culture medium (optimal amount may vary depending on cell line and chosen hydrolysate)
2. Dissolve completely
3. Sterile filter supplemented medium by 0.2  $\mu$  membrane filtration

### Features

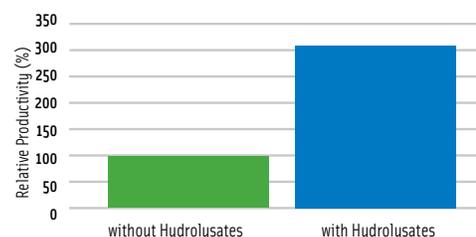
- Ultrafiltered to reduce endotoxin and residual proteins, and increase consistency.
- Growth performance is tested using CHO cells to ensure superior performance.
- Shelf life is at least four years when stored at room temperature (15-30° C).
- Available in 1 kg packaging.
- Custom packaging sizes available.



**Figure 1.** Growth of serum-free adapted HEK 293 cells in IS 293. Serum-free adapted HEK 293 cells were seeded in IS 293 medium at a starting inoculation of  $5 \times 10^5$  cells/mL (30 mL medium in a 125 mL shaker flask). Viable cell density was determined over six days.



**Figure 2.** Percentage of viable recombinant CHO cells using optimized basal medium in shaker flask with and without addition of protein hydrolysate (6 g/L). Viable cell density was determined over eleven days.



**Figure 3.** Relative productivity of recombinant protein expression in CHO cells using optimized basal medium in shaker flask with and without addition of protein hydrolysate (6 g/L).

## Protein

hydrolysates have long been used in serum-free cell culture media as supplements to improve growth or production. These hydrolysates are specifically designed for cell culture applications where low endotoxin levels and high clarity are required. All contain pure sources of soluble amino acids, peptides, vitamins and essential elements. Incoming raw material testing and specifications for these products have been carefully designed to ensure consistency. Growth performance testing is conducted using CHO cells to ensure superior performance.

For more information on all of our Cell Culture Products, call 1 (800) 437-5706 and ask for your Territory Manager or visit our website at [www.irvinesci.com](http://www.irvinesci.com).

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