Product Information

4512 CellPrime® r Insulin

Recombinant human insulin

Product description

Due to the length of time that recombinant insulin has been available, its use is well established in cell culture. The target audience looks for recombinant human insulin that meets the highest non-animal origin standards, meaning that no animal-derived components are used in either the

- Master Cell Bank (MCB),
- Working Cell Bank (WCB),
- Raw materials,
- Manufacturing process, or
- Final product

CellPrime® r Insulin is the answer to these needs, and supports current market requirements, as it is manufactured in an animal-origin free facility using only non-animal origin raw materials and process enzymes.

Application

Insulin has been recognized as a pivotal component for cellular carbohydrate metabolism that enhances cell growth and protein production. Due to its ability to extend the long-term viability of various cell lines, insulin is used in mammalian cell culture geared towards the production of monoclonal antibody therapeutics, viral vaccines and a wide spectrum of other recombinant biomolecules (e.g., coagulation factors).

Reconstitution method

Resolubilize CellPrime® r Insulin in distilled water and adjust the pH with dilute HCl (0.1 or 0.01N, depending on the volume of solution). Acidic conditions (pH ~2-3) facilitate the dissolution of the powder, and the solution will become clearer as it passes through the isoelectric point (pH 7) of the product. Acidic conditions also reduce the potential for bacterial growth and the formation of enzymatic by-products. Recombinant human insulin is also soluble at basic pH (pH ~10-11) using 0.1N NaOH. Similar reactions will occur around the isoelectric point of the product, as mentioned earlier.

General recommendations:

1. Do not prepare concentrated insulin solutions, as solubility is difficult and multimers can form.
2. Adjust to acidic pH to facilitate solubilization and minimize the effects of neutral pH-binding proteases. For added protection, consider adding an acid protease inhibitor.
3. Sterile-filter the solution using a 0.2 micron low protein-binding filter. Avoid aeration and/or foaming during solubilization and filtration, as this can cause protein denaturation.
4. Store solutions at 2-8 °C for up to 8 hours.
5. Do not heat above 30 °C and do not freeze.
6. The recommended insulin working concentration is 1-10 µg/mL.

As an alternative, CellPrime® r Insulin solutions can be prepared with phosphate buffered solution (PBS). Resolubilize the aforementioned products in PBS at a concentration of 1 mg/mL. Allow to gently rock for at least 1-2 hours at room temperature. Do not vortex. Solution is ready when clear. Prior to evaluation, follow steps 3–6 for final processing.

Ordering information

Catalog number	Product name	Pkg. size
4512.01	CellPrime® r Insulin, recombinant human insulin, 1 g	1 g
4512.10	CellPrime® r Insulin, recombinant human insulin, 10 g	10 g
4512.50	CellPrime® r Insulin, recombinant human insulin, 50 g	50 g
4512.100	CellPrime® r Insulin, recombinant human insulin, 100 g	100 g

For more information please visit
www.merckmillipore.com/insulin

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