ZAPR™ Red Blood Cell Lysing Buffer

Product Name: ZAPR™

Product Use: Red Blood Cell (RBC) Lysing Buffer solution used for tissue and cell processing

Product Codes: ZAPR-100

Features: GMP quality; sterile; USP grade materials; no animal components; no human proteins; no antibiotics

INCELL CERTIFIED
Chemically Defined
No Animal-Derived Components

Manufacturer:	**INCELL Corporation LLC**	**Distributor:**	**INCELL Corporation LLC**
Address:	12734 Cimarron Path	**Address:**	12734 Cimarron Path
City/State/Zip:	San Antonio, TX 78249	**City/State/Zip:**	San Antonio, TX 78249
Phone:	800.364.1765; 210.877.0100	**Phone:**	800.364.1765; 210.877.0100
Email:	info@incell.com	**Email:**	info@incell.com
FAX:	210.877.0200	**FAX:**	210.877.0200

General Description

ZAPR™ is INCELL's Red Blood Cell (RBC) Lysing Buffer Solution. ZAPR™ is sterile, "xeno-free", GMP manufactured, chemically defined and ready-to-use. All components used to manufacture ZAPR™ are USP grade. ZAPR™ has a Master File with the FDA. Red blood cells (RBCs) are commonly found in processed tissues since they are a blood component. ZAPR™ is used as a rinsing solution to clear RBCs from isolated tissue samples and from products intended for clinical use. ZAPR™ was developed for use with human tissues, but it is also an effective RBC lysing buffer that is effective with other mammalian source tissues.

Formulation and Packaging

GMP manufactured ZAPR™ RBC lysis buffer is formulated with USP grade components. ZAPR™ is available in 100 mL square PETG media bottles. Product or catalog number is ZAPR-100. Larger volumes or custom packaging (e.g., bags) can be special-ordered with 3 to 4 weeks lead time and purchase of at least 100 units.

Use and Methods

ZAPR™ is used as a post processing rinse to lyse residual RBC in processed tissue or cell samples, including cells from blood. Pre-rinse the collected tissues to minimize blood contamination. Process tissues by tissue-appropriate methods (e.g., mincing, enzymatic digestion, chelating agents, rinsing) to release and separate cells. Centrifuge cell suspension to pellet the cells at a g force appropriate for the cells being released. A density gradient buffer may be used to fractionate some cell suspensions, if appropriate, particularly for blood or bloody samples. After the suspension processing solution or buffer is removed, add 5 volumes of ZAPR™ a cell pellet or fractions containing a smaller percentage (<20%) of RBCs in the cell population. For whole blood, use 10 volumes of ZAPR™ per volume whole blood (e.g., use 100 mL ZAPR™ per 10 mL whole blood).

The ZAPR™-cell suspension is gently mixed to ensure homogeneity and to minimize RBC clumping. The suspension is left at room temp (15°C to 30°C) for 10 minutes. The suspension is diluted at least 2-fold with cell appropriate media or buffer, then again centrifuged to gently pellet the cells as per the protocol for that cell type. If the pellet is still red due to RBCs then repeat the ZAPR™ treatment steps again and do the cell pipetting gently because the cells may be somewhat fragile. Re-suspend the cells in a storage media, storage solution or buffer, serum, or culture media depending on intended use.

ZAPR™

RBC Lysing Buffer

Manufacturing

ZAPR™ Red Blood Cell Lysing Buffer is manufactured by sterile 0.22 µm filtration and packaging, using cGMP standards in an ISO Class 7 clean room and ISO Class 5 biosafety cabinet. Raw materials are pre-tested, and the final product is assayed for endotoxin, sterility (bacteria, fungi, and mycoplasma) and other quality specifications and criteria (see Table 1) prior to release and preparation of the Certificate of Analysis (COA) for the lot.

Table 1. Data Collected for the COA

Specifications	Acceptance Criteria
pH	7.2 to 7.6
Osmolality	260 to 320 mmol/kg
Endotoxin	<0.1 EU/mL
Mycoplasma	None detected
Sterility	No microbial growth
Visual	Colorless, clear solution
Expiration	24 months after manufacture

Storage of ZAPR™ RBC Lysing Buffer

ZAPR™ Red Blood Cell Lysing Buffer solution can be stored at room temperature (15° to 30°C). The shelf-life is 24 months from the date of manufacturing.

Table 1. Examples of Human and Animal Tissues, Cells and Other Biological Products for Potential Use of ZAPR™ Suitable for Bio-Processing

Tissue Types	Primary Cell Type(s) Derived
Adipose (Fat)	Mesenchymal Stem Cells; Stromal vascular fraction regenerative cells; adipose cells
Bone Marrow Bone	Hematopoietic and mesenchymal stem cells; various types of renewable progenitor cells; Endothelial cells; entire population; bone & cartilage progenitors; other cells
Brain & Neural (Spinal)	Progenitors; Induction of differentiation
Breast	Primary epithelial cells and/or mesenchymal support cells
Cartilage	Chondrocytes & Progenitors
Colon; Gastrointestinal; oral; esophageal	Primary epithelial and/or mesenchymal support cells or complex tissues in organ-like cultures
Dental Pulp	Hematopoietic and mesenchymal stem cells; various types of progenitor cells; similar to bone marrow
Heart	Primary muscle and mesenchymal cells
Kidney	Primary epithelial cells and/or mesenchymal support cells
Liver	Primary epithelial cells and/or mesenchymal support cells
Lung	Primary epithelial cells and/or mesenchymal support cells
Lymph Node	Lymphocytes and mesenchymal support cells
Muscles (Peripheral; Heart; Smooth)	Pericytes; Progenitor muscle cells; Mesenchymal or Stromal Stem Cells; other regenerative cells
Pancreas; Other Neuroendocrine organs	Pancreatic islet beta and acinar cells; other organs (e.g., adrenal)
Parathyroid	Adenoma cells isolated and stored for potential autologous re-transplantation
Peripheral or apheresis blood	Various types of white blood cells, including lymphocytes, macrophages, etc.; Circulating or mesenchymal cells; endothelial cells.
Placenta and birth tissues	Trophoblasts; Syncytiotrophoblasts; Endothelial cells; Hematopoietic and mesenchymal stem cells; various renewable progenitor cells from amnion and chorion
Prostate	Primary epithelial cells and/or mesenchymal support cells
Skin (adult; newborn)	Epidermal keratinocytes; biopsies; hair follicles Dermal Fibroblasts; Mesenchymal cells
Spleen	Lymphocytes and mesenchymal support cells
Tumors	Epithelial, mesenchymal, lymphoid
Umbilical cord	Hematopoietic and mesenchymal stem cells; various types of renewable progenitor cells; Endothelial cells

*Use of ZAPR™ RBC Lysis solution is based on protocol and processing needs.

Master Files Applications Note

INCELL media and solutions are in FDA Drug and Device Master Files but have not been tested by INCELL for any specific diagnostic or therapeutic use. To request use of a Master File call, FAX, or email to info@incell.com.

Animal Component Free. INCELL certifies that the Product is "animal component free" per the following criteria:

- No animal derived supplements are added by INCELL or come from raw materials supplied as components of the Product.
- Product does not come into contact with animal derived material during manufacturing, processing, handling, or packaging.
- This certification applies only to the condition of the above-described Product in its unopened package, and INCELL assumes no responsibility for a Product failing to meet this Statement after handling or use after opening the package.
- Signed "Animal Component Free Statement" can be provided on request.

Ordering: Contact INCELL Corporation

Toll Free: 800.364.1765
info@incell.com
FAX: 210.877.0200

Technical Assistance

The scientists at INCELL are available to discuss the media or special needs of your cells, and to assist you in your cell culture applications. Call 1-800-364-1765 or e-mail info@incell.com.