Ruhvenile® Biomedical
DSIR recognised · ISO 9001:2015 certified · Discovered, developed and manufactured in India



MonoImmune™ PBMC CSP Tube

Technical product specification sheet. Ambient-stable peripheral blood mononuclear cell (PBMC) collection and preservation system (Cell Stabilization & Preservation).

1. Product overview and intended use

Intended use	Sterile, evacuated, single-use whole blood collection tube that preserves live PBMCs at ambient room temperature (18–25°C) for up to 72 hours, without cold-chain logistics or immediate on-site centrifugation.
Key value	Maintains PBMC viability, metabolic integrity and surface immunophenotype stability for up to 72 hours at ambient temperature. Removes dry-ice and gel-pack transit and remote centrifugation, and keeps live cells for flow cytometry, functional immunology assays and single-cell genomics.
Regulatory status	For in vitro diagnostic (IVD) use; clinical validation and verification. Third-party validation is ongoing.

2. Physical and technical specifications

Tube capacity	10 mL total evacuated capacity (9.0 mL target fill mark)
Stabilizer fill volume	1.5 mL proprietary, chemically defined, ACD-based cell stabilization and preservation medium
Target blood draw	7.5 mL whole venous blood (8.0–8.5 mL maximum operating range)
Stabilizer-to-blood ratio	1 : 5 (1 part stabilizer to 5 parts whole blood)
Reagent pH (pre-draw)	7.1 ± 0.1 (buffers to physiological pH 7.3–7.4 on 1:5 blood addition)
Osmolality	Physiological isotonic range (290–305 mOsm/kg)
Tube material	Medical-grade, shatter-resistant clear polyethylene terephthalate (PET)
Cap	Clinical yellow safety pull-cap with deep violet MonoImmune™ label and clear viewing window
Sterility and packaging	Sterile interior (0.22 µm aseptic filtration / validated sterilization), single-use. Vacuum-sealed foil pouches, 50 tubes per box.

3. Storage, handling and transit

Long-term storage (pre-draw)	4°C (2–8°C): more than 12 months. Do not freeze.
Clinic and field storage (pre-draw)	15–25°C: 6–12 months.
Collection	Standard venipuncture. Draw until the vacuum stops at the printed 9.0 mL indicator (7.5 mL blood).
Mixing	Invert gently 8–10 times immediately after collection. Do not shake or vortex vigorously (hemolysis).
Post-draw transit	Keep upright at 18–25°C for up to 72 hours before PBMC isolation. Do not refrigerate or freeze blood-filled tubes.

4. Downstream compatibility

- Standard density-gradient centrifugation (Ficoll-Paque™, Lymphoprep™)
- Multiparameter flow cytometry immunophenotyping
- Live cell culture and functional T-cell / monocyte assays (ELISpot, ICS, cytokine release, proliferation)
- Transcriptomic and single-cell genomic workflows (scRNA-seq, scATAC-seq, TCR/BCR)
- Biobanking and cryopreservation workflows

5. Quality control and compliance

Manufactured under ISO 9001:2015 quality management at the Ruhvenile® Biomedical facility, New Delhi. Every production lot is released against: reagent pH (7.1 ± 0.1) and osmolality; vacuum draw accuracy and fill-volume tolerance; visual clarity and particle-free inspection; sterility testing and endotoxin screening (below 0.25 EU/mL).

6. Validation status

Independent third-party validation of MonoImmune™ is ongoing. Ruhvenile® supplies free evaluation samples to any laboratory that wants to validate the product head-to-head against its current collection standard (PBMC recovery, viability and flow cytometry performance after 72 hours). Request a validation pack at info@ruhvenile.com or WhatsApp +91 858 703 3367.

7. Ordering

Catalogue no. RVN-MI-1.5: MonoImmune™ PBMC CSP Tube, pack of 50 tubes. No minimum order quantity. Dispatch within 3–5 working days.

Intended for in vitro diagnostic use and clinical validation and verification. Performance values are design specifications; independent validation data will be published when available.