Product Name

Name: HematoType Karyotyping Medium
Cat. No.: C3640-0500
Size: 500 mL

Product Description

HematoType Karyotyping Medium was developed to stimulate the proliferation of human hematopoietic cells from bone marrow as well as peripheral blood. This medium is particularly effective for karyotyping of acute non-lymphocytic leukemias and various stages of chronic myelogenous leukemia as well as other hematological disorders such as myelodysplastic syndrome and polycythemia vera.

In the presence of a conditioned medium, acute and chronic nonlymphocytic leukemic cells in bone marrow and peripheral blood cultures are stimulated to enter into mitosis by DNA replication. After 48-72 hours, a mitotic inhibitor is added to the culture to stop mitosis in the metaphase stage. After treatment by hypotonic solution, fixation and staining, chromosomes can be microscopically observed and evaluated for abnormalities.

Materials

Hematopoietic Cell Karyotyping Medium is based on MEM-Alpha basal medium supplemented with L-Glutamine, fetal bovine serum, antibiotics (gentamicin) and conditioned medium.

Procedure

1. Inoculate approximately 0.5 ml of bone marrow suspension or 0.5-1x10^7 Ficoll-separated peripheral blood cells into culture medium containing 10 ml of HematoType Karyotyping Medium. Invert tubes gently to mix specimen.
2. Incubate the culture for 72-120 hours.
3. Add 0.1-0.2 ml of Colcemid Solution (VivaCell, Cat. #C3541) to each culture tube. Incubate the culture for an additional 15-30 minutes.
4. Transfer the culture to a centrifuge tube and spin at 500*g* for 5 minutes.
5. Remove the supernatant and resuspend the cells in 5-10 ml of hypotonic 0.075 M KCl (VivaCell, Cat. #C3540). Incubate at 37℃ for 10-12 minutes.
6. Spin at 500 *g* for 5 minutes.
7. Remove the supernatant, agitate the cellular sediment and add drop-by-drop 5-10ml of fresh, ice-cold fixative made up of 1 part acetic acid to 3 parts methanol. Leave in 4℃ for 10 minutes.
8. Repeat steps 6 and 7.
9. Spin at 500 *g* for 5 minutes.
10. Resuspend the cell pellet in a small volume 0.5-1 ml of fresh fixative, drop onto a clean slide and allow to air dry.
11. At this stage, the preparation can be treated with trypsin solution and stained with Giemsa solution (VivaCell, Cat. #C3720) for G-Banding karyotyping.

Storage and Stability

- The product should be kept at **-20°C**. After thawing, the medium should be stored at **2-8°C**, and used within 10 days after thawing.
- The product must be kept frozen and protected from light.
- If appropriately stored, the solutions are stable for at least **24 months** from the date of manufacture.

Quality Control

HematoType Karyotyping Medium is tested for appearance, sterility, pH, osmolality, and endotoxin. For full specifications please check the lot-specific Certificate of Analysis (CoA).

Quality Assurance

- Manufactured under ISO 13485 QMS and in compliance with applicable cGMP guidelines.
- Manufactured under controlled environments and processes in accordance with:
  1. ISO 13408 – Aseptic Processing of Health Care Products;
  2. ISO 14644 – Airborne Particulate Cleanliness Classes in Clean Rooms and Clean Zones.

Manufacturer

Shanghai Dr. Cell Co., Ltd.

Issue Date

January 2024

Precaution and Disclaimer

- For in vitro diagnostic use. The medium is not intended for therapeutic use.
- Use of HematoType Karyotyping Medium does not guarantee the successful outcome of any prenatal diagnostic testing.
- It will not affect cell growth performance if a flocculent precipitate is observed in the medium.
- Do not use HematoType Karyotyping Medium beyond the expiration date indicated on the product label.