


MarrowMAX™ Bone Marrow Medium

Catalog Numbers 12260-014, 12260-001, 12260-097, 12260-098

Pub. No. MAN0018525 Rev. E.0

 **WARNING!** Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from [thermofisher.com/support](https://www.thermofisher.com/support).

Intended use

MarrowMAX™ Bone Marrow Medium is qualified for the *in vitro* propagation of primary cultures of human bone marrow, peripheral blood, and other hematopoietic cells for cytogenetic studies and *In Vitro* Diagnostic (IVD) procedures for hematological disease.

Cytogenetic products are for professional use. They are used in medical laboratories by personnel who have received specialized education and training with regard to procedures utilizing IVD products. IVD products of this type are not intended as sole determinant in a diagnostic situation. Test results are interpreted by a healthcare professional as part of the clinical management of a patient.

Principle and explanation of procedure

- Bone marrow provides a source of mononuclear bone marrow cells used in hematological disease diagnostic testing.
- MarrowMAX™ Bone Marrow Medium has been optimized to maximize colony attachment, growth rates, and to provide prolific metaphasic yield. MarrowMAX™ Bone Marrow Medium is an optimized RPMI 1640 medium, supplemented with Fetal Bovine Serum (FBS), gentamicin, and L-glutamine. It also contains a novel human stromal cell conditioned medium that consists of a unique blend of hematopoietic growth factors. MarrowMAX™ Bone Marrow Medium does not contain GCT conditioned medium and is a nutritionally complete medium that requires no further supplementation.
- This product is sterile filtered.

Contents and storage

All quality control testing results are reported on lot-specific Certificate of Analysis available on our website: [thermofisher.com](https://www.thermofisher.com).

Product	Cat. No.	Storage	Shelf life ^[1]
MarrowMAX™ Bone Marrow Medium: <ul style="list-style-type: none"> • 100 mL • 500 mL • 10 × 500 mL • 20 × 100 mL 	<ul style="list-style-type: none"> • 12260-014 • 12260-001 • 12260-097 • 12260-098 	Protect from light; -20°C to -5°C	18 months

^[1] Shelf life is determined from Date of Manufacture. Do not use beyond the labelled expiration date.

Related materials

Unless otherwise indicated, all materials are available through thermofisher.com. "MLS" indicates that the material is available from fisherscientific.com or another major laboratory supplier.

Item	Source
KaryoMAX™ Colcemid™ Solution, liquid (10 µg/mL), in HBSS	15210040
KaryoMAX™ Colcemid™ Solution, liquid (10 µg/mL), in PBS	15212012
KaryoMAX™ Giemsa Stain Stock Solution	10092013
Gurr Buffer tablets (pH 6.8)	10582013
Amphotericin B	614122500
KaryoMAX™ Potassium Chloride Solution	105750
Trypsin 2.5%, no phenol red	150900
Nunc™ Cell-Culture Treated Multidishes, 6-well	140675
Nunc™ 15mL Conical Sterile Polypropylene Centrifuge Tubes	339651
Nunc™ 50mL Conical Sterile Polypropylene Centrifuge Tubes	339653
Nunc™ Thermanox™ Coverslips (25 mm)	174985
Nunc™ Serological Pipettes (5 mL)	170355

Precautions

Do not use the product if packaging, including bottles and vials, have been compromised and/or show evidence of microbial contamination, cloudy appearance, discoloration, drying, cracking, or other signs of deterioration. MarrowMAX™ Bone Marrow Medium should be received frozen; therefore, a thawed product is an indication of a compromised product.



CAUTION! Human bone marrow is biohazardous. Follow standard precautions for handling, storage and disposal.



CAUTION! Do not use for injection or infusion! Please report any serious incidents in relation to the device to the manufacturer and the Competent Authority of the EU Member State in which the user and/or patient is established.

Procedural guidelines

- Always use proper aseptic techniques and work inside a laminar flow hood. Consult our [Gibco Cell Culture Basics](#) for aseptic handling.
- Perform all incubations in a humidified 37°C, 5% CO₂ incubator unless otherwise specified.

Guidelines for MarrowMAX™ Bone Marrow Medium

- MarrowMAX™ Bone Marrow Medium is supplied frozen, ready to use upon thawing.

- Thaw at 2–8°C, then mix by gently swirling to ensure homogeneity. Do not thaw at 37°C. This may result in formation of a precipitate and should be avoided.
- MarrowMAX™ Bone Marrow Medium contains Fetal Bovine Serum (FBS); flocculent debris can develop upon thawing and storage.
- Thawed, unopened MarrowMAX™ Bone Marrow Medium can be stored protected from light at 2–8°C for up to two months within the labeled expiration date.
- Once opened, use MarrowMAX™ Bone Marrow Medium products within 10 days for maximal growth performance.
- Avoid repeated warming/cooling and prolonged exposure to light.
- Do not use beyond the labeled expiration date.

Culture bone marrow specimens for cytogenetic analysis

1. Use the appropriate amount of bone marrow, based on the patient's white cell count, to inoculate 6-well tissue culture-treated plates (Nunc™ Cat. No. 140675) with 5 mL of MarrowMAX™ Bone Marrow Medium (1 x 10⁶ cells/mL).
2. Incubate the cultures for 24 hours in a humidified incubator at 37°C and 5% CO₂.
3. For the final 1–2 hours of incubation, add 0.05 µg/mL of KaryoMAX™ Colcemid™ Solution (Cat. No. 15210040 or Cat. No. 15212012) to each culture well, then gently rotate the dish to mix.
4. Transfer the volume of each bone marrow culture well into a 15-mL conical tube (Cat. No. 339651), then centrifuge for 5 min at 300 × g.
5. Remove the supernatant, resuspend the pellet, then incubate for 15 minutes at room temperature with 10 mL of 0.068 M KCl (KaryoMAX™ Potassium Chloride Solution Cat. No. 105750) warmed to 37°C.
6. Gently add 0.5 mL of fresh 3:1 methanol/glacial acetic acid fixative, then centrifuge at 300 × g for 5 minutes.
7. Remove the supernatant, then resuspend the pellet in fixative for 10 minutes at room temperature.
8. Repeat step 7 three times, then resuspend the pellet in 0.5 mL of chilled fixative.
9. Pipet 35 µL of the cell suspension onto a wet microscopic slide, then spread for chromosome analysis.
10. Stain the slides for chromosome analysis following your own laboratory's methods for staining.

Stain with Giemsa Stain

Banding of chromosome with enzymes and stains is essential to identifying normal and abnormal chromosome structures.

1. Prepare six Coplin jars according to the following table:

Jar number	Contents
1	0.125% trypsin/0.9% NaCl mixture
2	0.9% NaCl for rinsing
3	0.9% NaCl for rinsing
4	Gurr Giemsa stain (R66) mixed with Gurr 6.8 buffer and acetone
5	Gurr 6.8 buffer for rinsing
6	Gurr 6.8 buffer for rinsing

2. Place a slide for a prescribed amount of time in the jar containing the trypsin/NaCl mixture (Jar 1).

This time can be as short as 10 seconds or as long as 2 minutes, depending on the activity level of the trypsin being used.

3. After the trypsin time has elapsed, remove the slide, then rinse by sequential dipping into the 0.9% NaCl rinsing jars (Jars 2 and 3).

4. Place the slide in the staining jar (Jar 4) containing the Gurr stain and buffer for 5 minutes.

This time can vary depending on the strength of the stain used.

5. Remove the slide from the jar, then rinse by sequential dipping into the two Gurr buffer rinsing jars (Jars 5 and 6).

6. Remove the slide from the last rinse to air dry, then coverslip the slide with Cytoseal™ 60.



It is allowed to dry in the oven (50°C) after which it is ready for metaphase scanning under the microscope.

Quality assurance/control

Every lot of MarrowMAX™ Bone Marrow Medium is performance tested by a certified US reference cytogenetics laboratory to ensure consistently superior performance. Bone marrow cells from the aspirate of a normal adult donor are cultured for 24 hours in MarrowMAX™ Bone Marrow Medium before measuring the mitotic index and chromosome banding resolution. In addition, each lot is tested for pH and osmolality, and must pass a sterility test prior to lot release.

Labeling symbols

The symbols present on the IFU and labels that are not globally recognized as per ISO 15223 are explained in the following table.

	READ SAFETY DATA SHEET Consult Safety Data Sheet for risks associated with product.
	AUTHORISED REPRESENTATIVE IN THE UNITED KINGDOM

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at www.thermofisher.com/us/en/home/global/terms-and-conditions.html. If you have any questions, please contact Life Technologies at www.thermofisher.com/support.

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Revision	Date	Description
E.0	12 June 2023	Changed storage conditions to -20°C to -5°C.
D.0	26 January 2023	Updated manufacturing address to Paisley. Removed UKCA symbol. Minor edits
C.0	9 August 2022	Catalog numbers were added and minor corrections were made to the product information sheet.
B.0	4 March 2020	The EC Rep address was updated.
A.0	15 March 2019	Initial release.

The information in this guide is subject to change without notice.

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