Neo MSC Media Kit GMP Grade\nfor Cultivation of Mesenchymal Stem Cells \n1 x Chemically Defined Medium \n1 x Recombinant Growth Factor Supplement

#Cat: NB-58-0127-K1 Size: Kit
#Cat: NB-58-0127-K2 Size: Kit
#Cat: NB-58-0128-K1 Size: Kit
#Cat: NB-58-0128-K2 Size: Kit

General Information

Mesenchymal stem cells (MSCs), also referred to as mesenchymal stromal cells, are adult stem cells exhibiting the potential to differentiate into most body cell types. Therefore, human MSCs became a promising tool for cell therapeutic approaches and clinical research. Neo-Biotech's stem cell portfolio provides safe and convenient solutions for superior cultivation of human MSCs following strict quality and production for research and GMP regulated fields.

Neo MSC Media consists of a Chemically Defined Medium (NB-58-0127-K1, NB-58-0127-K2, NB-58-0128-K1, NB-58-0128-K2) and a Recombinant Growth Factor Supplement. After supplementation, the Neo MSC Media medium is ready-to-use without further preparations necessary. The complete medium efficiently promotes growth and proliferation of human mesenchymal stem cells derived from various tissues, such as umbilical cord, bone marrow, adipose tissue, and other origins, while maintaining their multipotency. Neo MSC Media is suitable for cultivation in feeder-free cell culture environments, ensuring cell attachment and viability over several passages.

All components of the Neo MSC Media Kit are 100 % animal component-free and manufactured with components of EP/USP grade, providing safe and reliable performance. The Neo MSC Media Kit is available in two different manufacturing grades.

Product Name	Vol.	Cat. No.
Neo MSC Media Kit GMP Grade for Cultivation of Mesenchymal Stem Cells 1 x Chemically Defined Medium 1 x Recombinant Growth Factor Supplement	500 ml 100 ml	NB-58-0127-K2 NB-58-0127-K1
GMP Grade Manufactured under Good Manufacturing Practices (GMP) to comply with regulatory standards for clinical and commercial applications. GMP Grade ensures safety, traceability, and reproducibility for use in regulated environments such as clinical phase experiments or cell therapy production.		

Product Name	Vol.	Cat. No.
Neo MSC Media Kit Research Grade for Cultivation of Mesenchymal Stem Cells 1 x Chemically Defined Medium 1 x Recombinant Growth Factor Supplement	500 ml 100 ml	NB-58-0128-K2 NB-58-0128-K1
Research Grade Designed for preclinical studies, proof-of-concept experiments, and general academic research. Research grade is cost-effective and meets high-quality standards for consistency and reliability in exploratory studies with MSCs.		

For detailed information about our manufacturing grades, please contact our cell culture experts at info@neo-biotech.com

Neo MSC Media features at a glance:

- Chemically defined, animal origin-free formulation
- All-in-One Recombinant Growth Factor Supplement boosting growth and viability without differentiation
- Supports effective adherence on pre-coated cultureware
- Two manufacturing grades covering all MSC related projects and requirements

Product Specifications

Appearance	Clear red solution
Specifications	- Chemically defined - Serum-free - Animal derived component-free - Contains L-glutamine
Storage and shelf life	Basal Medium: Store at +2°C to +8°C Growth Factor Supplement: Store at 5-15°C Store protected from light. After supplementation store at +2°C to +8°C and use within 4 weeks.
Shipping conditions	Basal Medium: Ambient Growth Factor Supplement: Frozen

Instructions for Use

General Notes:

- Neo MSC Media requires coating with fibronectin, vitronectin, or other coating reagents prior to MSC isolation and expansion
- For sensitive applications, such as initial isolation from primary tissues, supplementation of Neo MSC Media with 2.0 - 2.5% Human Type AB Serum (Cat. No. NB-58-0039) may be required
- Neo MSC Media is suitable for defined and serum-supplemented expansion (see **Expansion strategies)**
- Neo MSC Media is formulated without antibiotics; supplementation of antibiotics is not recommended as human MSCs tend to accumulate antibiotics during culturing
- MSC surface marker expression strongly depends on tissue origin and handling practices. To ensure reliable surface marker detection, adhere to established protocols or contact our experts at info@neo-biotech.com

Supplementation protocol:

Important note: Neo MSC Media Medium requires supplementation with Neo MSC Media Recombinant Growth Factor Supplement.

1. Gently thaw Neo MSC Media Recombinant Growth Factor Supplement in the fridge or at room temperature.
2. Homogenize Neo MSC Media Recombinant Growth Factor Supplement by slowly shaking. Do not vortex.
3. Directly add the whole volume of Neo MSC Media Recombinant Growth Factor Supplement to the Neo MSC Media Basal Medium bottle adhering to aseptic techniques.
4. Homogenize the Neo MSC Media Medium by inverting. The ready-to-use medium can be stored at +2°C to +8°C protected from light and should be used within 4 weeks.

Preparation of pre-coated cultureware:

1. Neo MSC Media is optimized for fibronectin- and vitronectin-based coatings. It is suitable for use with most commercially available coating reagents.
2. For successful coating, adhere to the manufacturer's protocols and stick to proper aseptic handling.
3. Ensure the coating remains moist at all times.

Thawing of cryopreserved human MSCs:

1. Prewarm 5-10 ml Neo MSC Media in a sterile 50 ml tube.
2. Thaw frozen MSCs in a 37 °C waterbath gently swirling, until a small ice core remains in the vial.
3. Dropwise add the cells to Neo MSC Media and flush the vial with Neo MSC Media to collect all the cells.
4. Centrifuge cells at 300 g for 4 -5 min at room temperature.
5. Carefully remove supernatant and resuspend pellet in 0.5 - 1.0 ml of Neo MSC Media.
6. Count viable cells and dilute culture to the desired cell density.
7. Seed cells on pre-coated plates or T75 flasks and incubate in a humified CO_2 incubator at 37 °C.

Isolation of human MSCs from umbilical cord:

1. Explant umbilical cord (UC) tissue into Neo MSC Media supplemented with up to 2% Human Type AB Serum (Cat. No. NB-58-0039).
2. Incubate in a humidified CO2 incubator at 37 °C to allow cell spreading. Observe round-shaped cells migrating from the tissue pieces.
3. Exchange medium every three days by removing 75% of the total culture volume and replacing it with fresh Neo MSC Media supplemented with 2% Human Type AB Serum.
4. After ten days, carefully remove the umbilical cord. Dissociate the attached UC-MSCs from the culture surface, marking the end of passage 0.

Subculturing:

1. Carefully remove culture medium and wash MSCs in DPBS buffer.
2. Add a sufficient amount of recombinant trypsin to the cells, until all cells are coated with recombinant trypsin.
3. Incubate the culture flask for 2- 10 min at room temperature, until MSCs are detached.
4. Add 5-10 ml Neo MSC Media to the detached MSCs and transfer MSCs into a sterile 15 ml reaction tube.
5. Pellet MSCs for 4-5 min at 300 - 400 g at room temperature.
6. Remove supernatant and add the required amount of Neo MSC Media. Carefully seed the cells into a pre-coated culture vessel or flask.

Expansion strategies:

1. Defined Expansion:

- Suitable for defined culture conditions
- Ideal for cell therapeutic approaches or clinical research
- Use Neo MSC Media on pre-coated cultureware without further supplementation

2. Serum-supplemented Expansion:

- Suitable for long term cultivation
- Ideal for long-term expansion, or highly sensitive human MSCs
- Use Neo MSC Media on pre-coated cultureware with 2.0 - 2.5% Human Type AB Serum (Cat. No. NB-58-0039)

Formulation

This formulation is our proprietary composition and has no counterparts either in its composition, or in its action.

Precautions and Disclaimer

This product is for research and further manufacturing use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Help Needed?

If you have any further questions regarding this product, please do not hesitate to contact our cell culture experts by email (info@neo-biotech.com) or phone (+33 9 77 40 09 09).