NeoReplace Defined FBS Replacement ,sterile-filtered

#cat : NB-58-0177 Size : 500ml

#cat : NB-58-0178 Size : 100ml

General Information

NeoReplace, is a defined serum alternative developed as a functional replacement to traditional fetal bovine serum (FBS) for a broad range of cell culture applications. It is designed to provide FBS-like performance under controlled and reproducible conditions.

NeoReplace, can be used as a direct replacement for FBS at standard serum concentrations and is intended for seamless integration into established workflows. It supports reliable cell growth, adherence, proliferation, viability, and morphology across multiple cell types, including A549, HeLa, MDCK, Vero, primary immune cells, keratinocytes, and fibroblasts.

NeoReplace, combines extensive expertise in chemically defined media development with decades of experience in high quality FBS manufacturing. Its formulation includes essential trace elements, defined proteins, selected animal-derived, highly purified protein fractions to support robust cell growth while maintaining controlled and reproducible culture conditions. All animal components of NeoReplace are sourced from traceable origins and gamma-irradiated to mitigate potential risks in regulated environments, ensuring a high level of viral safety.

For cell types with increased lipid or fatty acid requirements, such as Hybridoma cultures, NeoReplace can be complemented with Lipid Mix (Cat. No. NB-58-0179), a chemically defined lipid supplement supporting membrane synthesis, cellular metabolism, and proliferation.

NeoReplace is suitable for basic research, diagnostic laboratory applications, vaccine production, and general biotechnology workflows.

Key Benefits

- High Performance without FBS for robust growth and stable morphology
- Designed and validated across multiple cell types including cell lines and primary cells
- Direct and seamless integration of NeoReplace in established workflows without adaptations
- Improved reproducibility due to the defined, homogeneous formulation
- Controlled sourcing and enhanced viral safety

Product Specifications

Appearance	Clear yellow liquid
Storage and shelflife	• Store at ≤-15°C. • Protect from light! • Avoid repeated freeze-thaw cycles. Preparation of aliquots recommended.
Working concentration	Use at 10% as a supplement in cell culture media or according to established FBS concentration
Thawing	Overnight at +2°C to +8°C.
Shipping conditions	Frozen (Dry ice)

Instructions for Use

General Notes:

- The standard working concentration of NeoReplace, is 10%. Cell line specific adjustments of the final working concentration may increase the performance.
- FBS can typically be directly substituted with NeoReplace without previous stepwise adaptation.
- Performance may depend on culture conditions such as medium composition, seeding density, and process parameters.
- Avoid repeated freeze–thaw cycles, as this may negatively impact product performance. Aliquoting upon first thaw is recommended.
- NeoReplace is compatible with established detachment workflows using trypsin. Using trypsin inhibitors is not required. For sensitive cell types, follow the detachment protocol in section “Cell Detachment & Trypsin Inactivation”.
- Do not heat inactivate NeoReplace. Due to the defined formulation, heat inactivation is not required.
- NeoReplace can be used solely or together with Lipid Mix (Cat. No. NB-58-0179).

Aliquotation of NeoReplace:

1. Thaw NeoReplace in a water bath at 37°C while shaking or overnight at +2°C to +8°C
2. Homogenize NeoReplace by slowly shaking. Do not vortex.
3. Transfer NeoReplace to the laminar hood.
4. Aliquot NeoReplace to units of 50 ml following proper aseptic techniques.
5. Depending on the intended use, proceed as indicated below:
    a. For long-term storage, freeze the NeoReplace aliquots again at ≤-15°C. Avoid repeated freeze-thaw cycles
    b. For direct use, use 50 ml NeoReplace to supplement

450 ml of basal cell culture medium, such as DMEM High Glucose, with L-Glutamine (Cat. No. NB-58-0057). After supplementation, use the cell culture medium within 6-8 weeks and store in darkness.

Adaptation and Culturing

Cell Type	Most cell types in adherent and suspension cultures
Culture Flask Type	As established in standard protocols
Medium Volume	As established in standard protocols
Inoculation Cell Density	As established in standard protocols
Temperature	37°C
CO2 Concentration	5.0% or as established in standard protocols

Direct Adaptation

Usually, for cells grown in serum supplemented medium or other serum-free medium little or no adaptation is needed and the cells may be directly transferred to NeoReplace supplemented media. Otherwise, follow the Instruction for Sequential Adaptation. It is advisable to keep a backup culture in the original media until cells have adapted.

Sequential Adaptation

- Sequential adaption to media containing 10% NeoReplace should be tested in parallel to achieve optimal growth conditions depending on the cell type.
- Subculture cells into medium supplemented with a 1:4 ratio of NeoReplace and FBS, which typically corresponds 0.5 ml NeoReplace and 1.5 ml FBS per 20 ml of cell culture medium (see table below). During the adaptation procedure seed at twice the normal seeding density.
- Subculture cells when confluency reaches 70–90%. Subculture the cells in fresh pre-warmed medium supplemented with 1:4 ratio of NeoReplace and FBS. Once consistent cell growth with high viability has been achieved, passage cells into medium supplemented with 1:2 ratio of NeoReplace and FBS.
- Repeat step 2 of this procedure, stepwise increasing the ratio of NeoReplace to FBS 3:4 followed by 9:10 until the cells are subcultured into medium supplemented with 100% NeoReplace. Multiple passages at each step may be needed.
- Continue to monitor and passage cells until consistent growth with high viability is achieved. After several passages in medium supplemented with NeoReplace, the culture is adapted.

Step	Ratio	Basal Medium [ml]	FBS [ml]	NeoReplace
1	1:4	9	0.75	0.25
2	1:2	9	0.5	0.5
3	3:4	9	0.25	0.75
4	9:10	9	0.1	0.9
5	1:1	9	0	1.0

Cell Detachment & Trypsin Inactivation

NeoReplace is compatible with established detachment workflows using trypsin. Further reagents, such as trypsin inhibitors are not required. For sensitive cell types, use sensitive detachment reagents, such as Accutase (Cat. No. NB-58-0037B) or adhere to the detachment protocol below:

1. Check the cells for confluency under the microscope. Most cell types should be passaged, when they are ~ 70% – 80% confluent
2. Transfer the culture flask under a laminar hood and remove the medium
3. Rinse cells with PBS (Cat. No. NB-58-0022) or another Ca2+ and Mg2+-free salt solution and completely remove the buffer.
4. Add enough trypsin (e.g., Cat. No. NB-58-0110) or trypsin/EDTA (e.g., Cat. No. NB-58-0112) to the culture flask to cover all cells
5. Incubate at 37°C, or for more sensitive cultures, at room temperature or +2°C to +8°C until cells are detached. Check for cell detachment continuously as prolonged exhibition to trypsin can cause cellular damage.
6. Collect the cells in a sterile 15 ml reaction tube and immediately add 5 – 10 ml of fresh NeoReplace
7. Centrifuge the cells for 5 min using standard centrifugation conditions appropriate for the respective cell type.
8. Remove the supernatant and gently resuspend the cell pellet in fresh cell culture medium supplemented with 10% NeoReplace.
9. Seed the cells to a distinct density according to established protocols in a sterile flask fresh cell culture medium with NeoReplace

Cryopreservation

NeoReplace is not suitable for cryopreservation. It is recommended to preserve cells in specialized serum-free cryopreservation media such as FreezeMe Two (Cat. No. NB-58-0066) or in DMSO-free cryopreservation media such as FreezeMe ZERO ,which support long-term storage and maintenance of genetic integrity.

Formulation

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

Precaution and Disclaimer

This product is for research use and further manufacturing only.

Help Needed?

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