

## Datasheet PANEXIN NTS

**Pure grade chemically defined Serum Substitute for Cells in suspension - New Technology**

Product	Description	Catalogue-No.	Size
PANEXIN NTS	Pure grade chemically defined FBS-substitute for non-adherent Cells in Suspension	P04-95850	500 ml
PANEXIN NTS	Pure grade chemically defined FBS-substitute for non-adherent Cells in Suspension	P04-95800	100 ml
PANEXIN NTS	Pure grade chemically defined FBS-substitute for non-adherent Cells in Suspension	P04-95080	50 ml

### Product description :

PANEXIN NTS is a complete chemically defined serum substitute for the cultivation of suspension cells under serum-free conditions. PANEXIN NTS is developed with a unique technology and contains a special 3-dimensional substance release system (3D-SRS) for an optimal support of cells with nutrients and growth stimulants.

The ready for use, sterile solution is added to the culture medium in a final concentration of 10%. It supports the growth of many cell types in an optimum manner.

Storage conditions:    -20° C in the dark  
 Stability:                2 years  
 Filling:                 50 ml, 100 ml, 500 ml, larger containers on request

### Composition:

PANEXIN NTS contains purified proteins, lipids, salts, amino acids, trace elements, and hormones in an optimized formulation and a new 3-dimensional substance release system (3D-SRS). PANEXIN NTS contains no growth factors, undefined hydrolysates or peptones.

### Suitability:

PANEXIN NTS is suitable for the cultivation of a variety of non-adherent suspension cells under serum-free conditions.

### Special Advantages:

PANEXIN NTS can be used for many cell lines to replace FBS. Due to selected and pretested raw materials PANEXIN NTS batches are very homogeneous. Therefore the complex charge testing known from FBS can be omitted with the use of PANEXIN NTS. The usual basal medium can still be used. PANEXIN NTS is completely chemically defined and contains no growth factors, undefined peptones or hydrolysates. Therefore, the interpretation of results from studies on effects of individually added growth factors is easier and more reliable in serum-free conditions. For cell lines which require specific growth factors, these should be added in a concentration as previously used.

## Instructions for Use :

In many cases a serum-free cultivation can be done without complex adaptation steps (suspension cell lines such as HL60, K562, as well as hybridoma cells).

- Thaw PANEXIN NTS in a water bath at 37° C. Please avoid repeated freeze-thaw cycles!
- Non-adherent cells (e.g. SP2) can be directly transferred into the nutrient solution (e.g. RPMI 1640, IMDM) supplemented with 10% PANEXIN NTS.
- Initial seeding density  $5 \times 10^4 - 1 \times 10^5$  cells/ml (e.g. T25, 10 ml).

Depending on the cell type the optimal PANEXIN NTS concentration can vary from 5-15%, comparable to FBS concentrations used previously. The optimal PANEXIN NTS concentration should be determined for each cell line. The tests should be started at a PANEXIN NTS concentration of 10% as for most cells the best results were obtained with this concentration.

As the basal medium you can use the classical standard media such as RPMI 1640, DMEM (high or low glucose), DMEM/F12, IMDM and so on. Make sure that L-glutamine is present in sufficient quantities (possibly supplement glutamine).

Depending on the cell type, some differences in morphology or proliferation rate could be observed with the various standard media. Many applications were performed with RPMI 1640 and IMDM for non-adherent cells. With these combinations very good growth stimulation was achieved with 5-15% PANEXIN NTS.

For more demanding cells an adaptation to PANEXIN NTS may be necessary.

## Adaptation instructions for PANEXIN NTS:

Precondition for a successful transition are vital cells (trypan blue exclusion staining, viability >90%), which should be harvested in the logarithmic growth phase. :

- Harvest cells as usual.
- Supplement your basal medium with 10% PANEXIN NTS = **MedPAN**
- The final solution is stable for at least 4 weeks at 4° C.
- Supplement your basal medium with 10% FBS = **MedFBS**

### 1) 75% MedFBS : 25% MedPAN

- Seed cells at  $5 \times 10^4 - 1 \times 10^5$  cells/ml (e.g. T25, 10 ml).
- Observe cells under a microscope, in the case of good proliferation (e.g. cell count >  $1 \times 10^6$  cells/ml), passage the cells for another 2-3 passages.

If normal growth is obtained transfer cells into:

### 2) 50% MedFBS : 50% MedPAN

- Seed cells at  $5 \times 10^4 - 1 \times 10^5$  cells/ml (e.g. T25, 10 ml).
- Observe cells under microscope, in the case of good proliferation (e.g. cell count >  $1 \times 10^6$  cells/ml), passage the cells for another 2-3 passages.

If normal growth is obtained transfer cells into:

### 3) 25% MedFBS : 75% MedPAN

- Seed cells at  $5 \times 10^4 - 1 \times 10^5$  cells/ml (e.g. T25, 10 ml).
- Observe cells under microscope, in the case of good proliferation (e.g. cell count >  $1 \times 10^6$  cells/ml), passage the cells for another 2-3 passages.

If normal growth is obtained transfer cells into:

### 4) 100% MedPAN

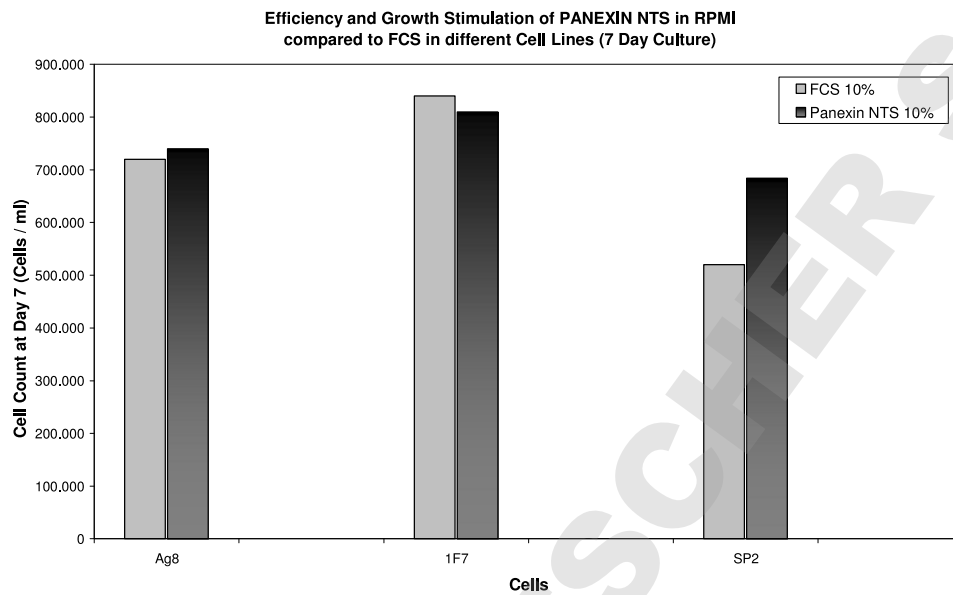
- Seed cells at  $5 \times 10^4 - 1 \times 10^5$  cells/ml (e.g. T25, 10 ml).
- Observe cells under microscope.

For some cells an adaptation to serum-free conditions is difficult to reach or even impossible.

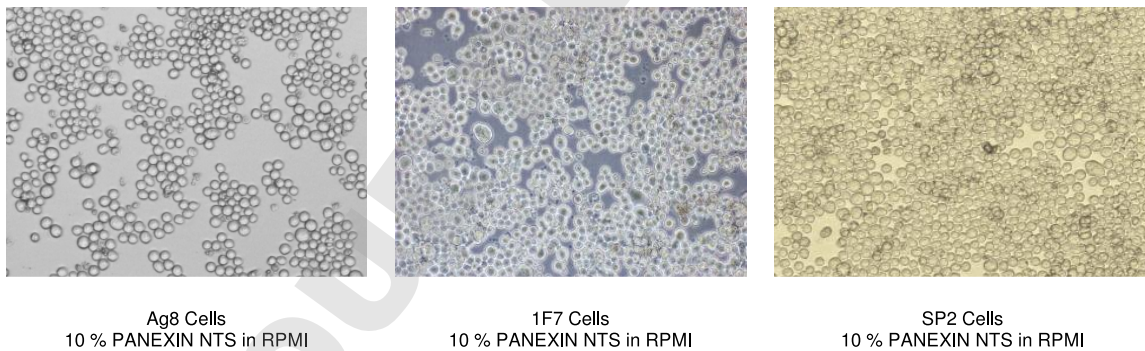
The following measures may help to facilitate a successful adaptation:

- Reseeding with a higher cell amount (about 2x to 4x of the usual cell density).
- Addition of growth factors (if known, which factors have a positive effect on the relevant cells).
- Change of basal medium. Note: A change of the basal medium to a richer or more complex formulation may be all that is needed to achieve growth in serum free condition.

**Growth Stimulation in different Cell Lines:**



**Fig. 1: Efficiency and Growth Stimulation of PANEXIN NTS compared to FBS (each 10% in RPMI)**



**Fig. 2: Different Cell Lines in RPMI with 10% PANEXIN NTS**

**Technical Support:**

Additional information will be available on our website: [www.pan-biotech.com](http://www.pan-biotech.com)

For any technical support, questions or remarks please contact your local PAN-Biotech partner or the technical department of PAN-Biotech via email ([info@pan-biotech.com](mailto:info@pan-biotech.com)) or phone ++49-8543-601630.