

Cell Culture

Volume 6



PAA
THE CELL CULTURE COMPANY

LIVE



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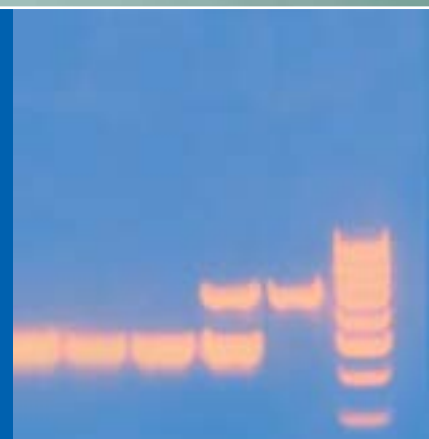
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News from PAA

The sixth issue of our Cell Culture Live will introduce to you a number of new and innovative products from the evergrowing PAA portfolio.

***Human Serum Plus** is a high quality human serum suitable for sensitive human cell lines. Due to its supplementation with additional factors Human Serum Plus gives rise to superior growth characteristics.*

*Two of our new products are designed for monoclonal antibody production. **Hybridoma Cloning Supplement (HCS)** is the first completely defined growth promoting supplement especially for hybridoma cells. **Hybridoma Express Medium** is optimized for hybridoma cells and is the perfect partner for HCS.*

***Bovine Pituitary Extract (BPE)** is a popular growth promoting agent in primary or stem cell culture. It substitutes FBS addition to the medium. The raw material used for the manufacturing of BPE by PAA is derived exclusively from cattle of New Zealand origin. Therefore maximum BSE-safety is guaranteed.*

*Introducing **MycTrace** the latest detection system for mycoplasma infections. MycoTrace is a kit system which gives reliable, quick and sensitive results in detection of mycoplasma DNA by PCR-technology.*

Enjoy your new Cell Culture Live.



*Harry Brack
(Sales and Marketing Director)*



Human Serum Plus

The Human Serum with the Little Extra



*Human Serum Plus –
for optimal culture conditions.*

The Human Factor

The Addition of human serum to culture medium provides human cell lines an environment closely matching physiological conditions. Human serum may be more gentle to sensitive human cell lines. Alternatively, animal sera usually are more effective in growth promotion of cultivated cells.

The Little Extra

Human Serum Plus is manufactured from high quality human serum of selected batches and is supplemented with additional herbal and bovine growth promoting factors. These factors of native and recombinant origin make Human Serum Plus achieve superior growth promotion characteristics in culture of human cell lines.

Natural Clotting

Human Serum Plus is obtained from whole blood which has not been treated with anticoagulants. It goes through the natural blood clotting process and only then is it centrifuged, so removing the solid constituents of the blood together with the fibrin.

Type AB

Human Serum Plus is originating exclusively from donors of blood group AB whose blood contains neither anti-A nor anti-B antibodies which can damage cultured human cells and disrupt immunological investigations.

Features and Benefits

- ▶ *Suitable for all human cells*
- ▶ *Recommended for lymphocytes and human macrophages*
- ▶ *Additional growth promoting factors*
- ▶ *Enhanced cell proliferation*
- ▶ *No anti-A and anti-B antibodies*

Order information

Human Serum Plus	C11-011	100 ml
	C15-011	500 ml

http://www.paa.com/human_serum_plus.html

Hybridoma Cloning Supplement

Supplement for Hybridoma Development

A hybridoma is created by fusing two cells; An antibody secreting B-cell from the immune system and a tumour cell. The resulting cells are screened for antibody positive hybridomas and can be cloned to produce monoclonal antibodies, which are an important tool in clinical diagnostics and therapies.

A main focus in developing hybridoma cells is successful selection and cloning. These critical steps require specific growth factors to achieve sufficient cell densities. Feeder cells or conditioned media were regularly used as a source for growth factors in former times.

Feeder cells unfortunately compete for nutrients and are therefore limiting the proliferation of hybridoma cells. Conditioned media on the other hand show great variations in growth factor concentration which affect cloning efficiency. A defined serum free growth supplement is therefore essential.

Hybridoma Cloning Supplement HCS is a fully defined supplement for hybridoma base media. To support the successful hybridoma development HCS contains hybridoma specific growth factors to obtain high cell densities for optimal cloning efficiency in the presence of serum within the medium.

For increased production rates HCS can be used as an enhancer for hybridoma cultivation in serum free conditions. The low protein content of HCS facilitates the isolation and purification of the produced antibodies.

Applications

- ▶ *Easy Fusion of B-cells with tumour cells*
- ▶ *Fast Selection and cloning of hybridoma cells*
- ▶ *Enhanced Antibody production*
- ▶ *For murine and human hybridoma*

Features and Benefits

- ▶ *Serum free growth supplement*
- ▶ *Fully defined composition*
- ▶ *High cloning efficiency*
- ▶ *Excellent monoclonal antibody production*
- ▶ *No feeder cells required*



Order information

Hybridoma Cloning Supplement HCS

F05-009

50 ml

<http://www.paa.com/hcs.html>



Hybridoma Express Plus

Special Medium for Hybridoma Cells



Hybridoma cells are usually cultivated in unspecific media, for example RPMI, DMEM or DMEM/Ham's F-12, with the addition of 10% Foetal Bovine Serum. The use of serum induces a number of concerns such as biological contamination risks and increased downstream purification problems.

Hybridoma Express Plus from PAA is a fully defined serum free medium for hybridoma cells. The low protein content simplifies the purification of the produced antibodies without loss of the activity of the proteins. It is also suitable for use in the fermenter, since it contains Pluronic which minimizes the occurring shear forces. The Media are supplied as complete, ready to use liquid media.

Features and Benefits

- ▶ *High antibody yield*
- ▶ *High growth capability for lymphoid and epithelial cells*
- ▶ *Chemically defined*
- ▶ *Low protein content*
- ▶ *Contains no animal derived products*
- ▶ *Pluronic for minimizing shear forces in fermenters*



Order information

Hybridoma Express Plus U15-040 500 ml

http://www.paa.com/hybridoma_express_plus.html

Bovine Pituitary Extract BPE

Security at the Back of Beyond



The raw material of BPE is derived from New Zealand, where no cases of BSE have been reported.

A Growth Promoting Supplement

Bovine Pituitary Extract (BPE) is an extract prepared from bovine pituitary glands. It is used for primary or stem cell cultivation in serum free or serum reduced conditions where additional supplementation from crude tissue extracts is still required. The Bovine Pituitary Extract can be used together with other growth factors, hormones and media to reduce or eliminate serum in cultivation of non-fibroblast cell types.

BSE-free New Zealand

The pituitary gland is part of the central nervous system which is known to be a potential risk material for contaminations with bovine spongiform encephalopathy (BSE). The raw material used for the manufacturing of BPE by PAA is derived exclusively from cattle of New Zealand origin, where no cases of (BSE) have been reported.

Applications

- ▶ *Mitogenic supplement in serum-free growth medium*
- ▶ *Cultivation of epithelial and endothelial cells*
- ▶ *For primary and stem cell cultures*

Benefits

- ▶ *BSE safe New Zealand origin*
- ▶ *Liquid extract with high mitogenic activity*
- ▶ *Higher mitogenic activities than lyophilised BPE*
- ▶ *Antioxidant activity*

Order information

Bovine Pituitary Extract	F001-006	1 ml
	F050-006	5 x 1 ml

<http://www.paa.com/bpe.html>

MycoTrace

The PCR Based Mycoplasma Detection Kit



DNA from different mycoplasma strains were amplified using MycoTrace and analyzed by electrophoresis. The gel shows from left to right: 100 bp DNA marker; *Acholeplasma laidlawii*; *Mycoplasma gallisepticum*; *Mycoplasma hyorhinis*; *Mycoplasma orale*; *Mycoplasma pneumoniae*; *Mycoplasma synoviae*; *M. synoviae* + internal control; internal control; 100 bp DNA marker

Mycoplasmas Endanger Your Cell Culture

Mycoplasmas can be widespread contaminants in cell culture. It is assumed that 5 to 35% of cell cultures in current use are infected. Mycoplasma affect cell cultures in many ways. In the worst case, contamination leads to diminished cell growth and the loss of cultures. To ensure your results are untainted routine screening for Mycoplasma is essential. Often mycoplasma contaminations remain unnoticed – are you sure that your cultures are clean?

Detection of Mycoplasma

There are several methods for the detection of Mycoplasma available. The best results for routine detection of Mycoplasma are achieved by Polymerase Chain Reaction (PCR) based methods. They give reliable, quick and sensitive results.

With **MycoTrace** PAA has developed a new PCR-based detection kit for application in your routine cell culture work. The MycoTrace kit contains all reagents for reliable and sensitive PCR analysis. The MycoTrace Primer Mix is able to detect different mycoplasma strains because of the consensus sequences of 16S rRNA genes.

Benefits

- ▶ **Highest safety**
- ▶ **Broad spectrum of efficacy***
- ▶ **Sensitive (Detects < 50cfu/ml mycoplasma)**
- ▶ **Fast results in less than 3 hours**
- ▶ **Complete kit system – Easy protocol for use**
- ▶ **Cost effective**

*tested against all strains listed in the Europ. Pharmacopoeia

Order information

MycoTrace PCR Detection Kit	Q050-020	10 Assays
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Each kit contains:

- Taq Polymerase
- MycoTrace Primer Mix
- Internal Control
- Buffer with dNTPs

<http://www.paa.com/mycotrace.html>

Elimination of Mycoplasma

If mycoplasma have been detected in your cell culture the highly effective antibiotic **MycoKill AB** eliminates the contamination rapidly and efficiently.

MycoKill AB is active at low concentrations for a broad range of mycoplasma subspecies. It acts on the protein synthesis machinery by interfering with ribosome translation as well as with transcription.

Order information

MycoKill AB	P11-016	100 ml
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http://www.paa.com/mycokill_ab.html



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