



2017/18 PRODUCT CATALOGUE

DICTYOSTELIUM DISCOIDEUM

 **FORMEDIUM**
CREATING THE CULTURE FOR DISCOVERY™

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DICTYOSTELIUM DISCOIDEUM

Dictyostelium Discoideum is a slime mold from the phylogenetic order Ascrasiales within the phylum Myxomycophyta. What makes this mold very interesting from a scientific point of view is the fact that Dictyostelium Discoideum represents a junction between single and multi-cellular organisms. Being a meat eater Dictyostelium Discoideum grows vigorously as autonomous cells when, as a food source, bacteria are present. When the cells are depleted from the bacterial food source they join with other adjacent cells to form multi cellular structures. To survive this period of nutritional starvation Dictyostelium Discoideum may eventually form fruiting bodies containing spores to increase the rate of survival during starvation. The ability to select between uni-cellular and multi-cellular life forms makes Dictyostelium Discoideum an interesting model for cell-cell interactions and development.

The genomic content of Dictyostelium Discoideum is four times that of Saccharomyces Cerevisiae with about 50 Mb of low GC DNA (20 %) localised at six chromosomes. Functional heterologous proteins are excreted into the media correctly folded and glycosylated.

As a food source Dictyostelium Discoideum feed on bacteria. Escherichia Coli or Aerobacter Aerogenus are nutritional sources for Dictyostelium Discoideum. The bacterial cells are grown on the nutrient SM medium and Dictyostelium Discoideum feed on these bacteria. The mold cells, feeding and dividing on the bacterial layer, forms colonies of growing and dividing cells. As the colony grows, the local bacteria layer becomes depleted.

Subsequently the individual slime mold amoeba join together to form multi-cellular structures and finally forming fruiting bodies. Within 3 to 4 days on SM medium, Dictyostelium Discoideum, starting as a uni-cellular organism, becomes a multi-cellular life form capable of making spores to survive starvation conditions.

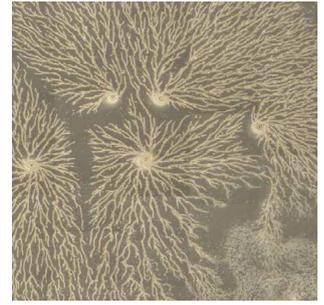
Some specific strains of Dictyostelium Discoideum are capable to grow axenically in a liquid medium without bacteria as food. Two types of media are available for culturing Dictyostelium Discoideum cells.

Non defined complex media based on mainly Peptone and Yeast extract. Proteose peptone provides high molecular weight peptides and proteins as a nitrogen source. Yeast extract is a source of vitamins, co-factors and carbohydrates. Both components are often supplemented by additional buffers, Glucose and Magnesium. HL5 is a good example of a non defined complex medium routinely used in the lab for culturing Dicty.

Synthetic defined minimal media such as FM medium and SIH medium are based on a well defined composition of mineral salts, vitamins and amino acids.

FM medium supports the growth of most strains that are capable of growing on HL5. The medium developed by Franke and Kessin is used for transformation of Dictyostelium Discoideum and genomic studies.

SIH is a newly developed modification of FM Medium. Aspartic acid is added. Tryptophane and Lysine concentrations are significantly increased, resulting in an increase of cell density up to 5×10^7 .



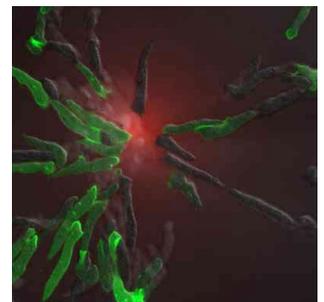
Phase contrast image of a large field of aggregating Dictyostelium cells.

Douwe Veltman, MRC Laboratory of Molecular Biology, Cambridge



The mound & fb, shows a mound of cells on the left (about half-way through the developmental cycle) and a mature fruiting body on the right.

Rob Kay, MRC Cambridge

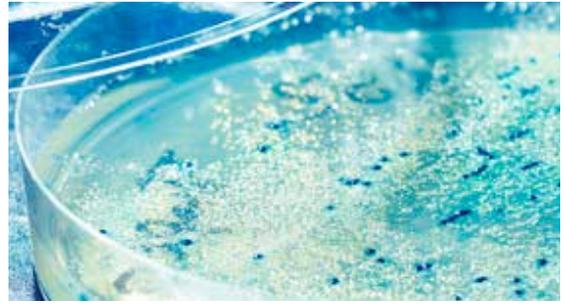


Confocal / DIC overlay image of a group of Dictyostelium cells chemotaxing towards a source of chemoattractant in the center of the field.

Douwe Veltman, MRC Laboratory of Molecular Biology, Cambridge

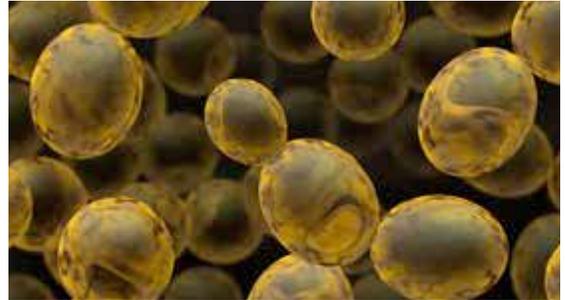
Non Defined Complex Dictyostelium Discoideum

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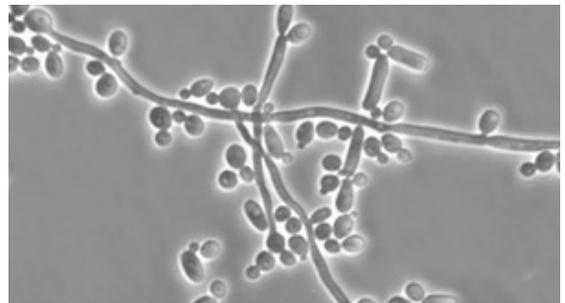
FM Defined Minimal Media

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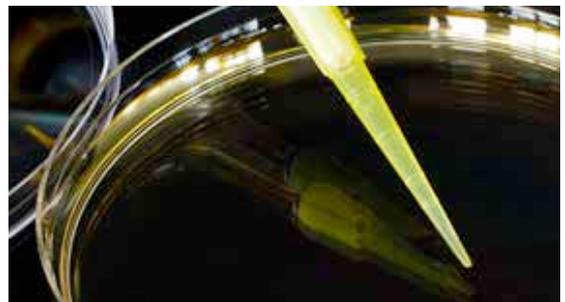
SIH Defined Minimal Media

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Yeast Media Components

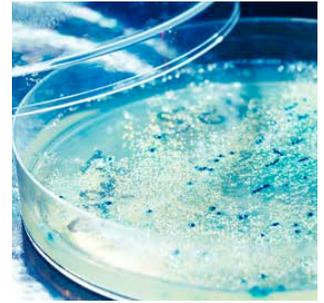
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NON DEFINED COMPLEX DICTYOSTELIUM DISCOIDEUM

Some specific strains of Dictyostelium Discoideum are capable to grow axenically in liquid media without bacteria as food. Peptone and Yeast Extract are the main components of these media within this group. Both products are present in various ratio's in different Dicty media. Peptone provides high molecular weight peptides and proteins as a nitrogen source. Yeast Extract is a source of vitamins, co-factors and carbohydrates. Often there is an additional Phosphate buffer present to inhibit acidification of the medium during cell growth.

Commonly used HL5 and HL5-C media are also available supplemented with extra vitamins and micro-elements. This supplement gives good results for cultures of Dicty cellines who require additional nutritional elements for starting up vigorous growth or protein synthesis.



This product category includes:

- 7 A Medium
- 7 AX Medium
- 8 SM Broth
- 8 SM Agar
- 9 SM Broth/5
- 9 SM Agar/5
- 10 VL6 Medium including Glucose, Animal Component Free (ACF)
- 11 VL6 Medium without Glucose, Animal Component Free (ACF)
- 12 HL5 Medium without Glucose
- 12 HL5 Medium including Glucose
- 13 HL5-C Medium including Glucose
- 13 HL5-C Medium without Glucose
- 14 HL5 Medium including Glucose supplemented with vitamins and micro-elements
- 15 HL5 Medium without Glucose supplemented with vitamins and micro-elements
- 16 HL5-C Medium including Glucose supplemented with vitamins and micro-elements
- 17 HL5-C Medium without Glucose supplemented with vitamins and micro-elements
- 18 LoFlo Medium
- 19 LoFlo Medium supplemented with Yeast extract

A MEDIUM

| SKU | Size |
|---------|---------|
| AMD0101 | 250g |
| AMD0102 | 1kg |
| AMD0103 | 6 x 1kg |

| Formula | g/l |
|---------------------------------|------|
| Peptone | 5 |
| Yeast Extract | 0.5 |
| Glucose | 5 |
| KH ₂ PO ₄ | 2.25 |
| K ₂ HPO ₄ | 0.7 |
| MgSO ₄ .anhydrous | 0.25 |

Suspend 13.7 gram powdered medium in 1 litre distilled water

Store dry at room temperature

AX MEDIUM

| SKU | Size |
|---------|---------|
| AXM0101 | 250g |
| AXM0102 | 1000g |
| AXM0103 | 6 x 1kg |

| Formula | g/l |
|---|------|
| Peptone | 14.3 |
| Yeast Extract | 7.15 |
| Glucose | 18 |
| KH ₂ PO ₄ | 0.49 |
| Na ₂ HPO ₄ .anhydrous | 0.49 |

Suspend 40.4 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation



GHS07 Skin & Eye Irritation

SM BROTH

| SKU | Size |
|---------|---------|
| SMB0101 | 250g |
| SMB0102 | 1000g |
| SMB0103 | 6 x 1kg |

| Formula | g/l |
|----------------|------|
| Peptone | 10 |
| Yeast Extract | 1 |
| Glucose | 10 |
| KH2PO4 | 1.9 |
| K2HPO4.3H2O | 1.3 |
| MgO4.anhydrous | 0.49 |
| Agar | 17 |

Suspend 41.7 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SM AGAR

| SKU | Size |
|---------|---------|
| SMA0101 | 250g |
| SMA0102 | 1000g |
| SMA0103 | 6 x 1kg |

| Formula | g/l |
|----------------|------|
| Peptone | 10 |
| Yeast Extract | 1 |
| Glucose | 10 |
| KH2PO4 | 1.9 |
| K2HPO4.3H2O | 1.3 |
| MgO4.anhydrous | 0.49 |
| Agar | 17 |

Suspend 41.7 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SM BROTH/5

| SKU | Size |
|----------|---------|
| SMB50101 | 250g |
| SMB50102 | 1000g |
| SMB50103 | 6 x 1kg |

| Formula | g/l |
|--|------|
| Peptone | 2 |
| Yeast Extract | 0.2 |
| Glucose | 0.2 |
| KH ₂ PO ₄ | 1.9 |
| K ₂ HPO ₄ .3H ₂ O | 1.3 |
| MgO ₄ .anhydrous | 0.49 |

Suspend 7.89 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SM AGAR/5

| SKU | Size |
|----------|---------|
| SMA50101 | 250g |
| SMA50102 | 1000g |
| SMA50103 | 6 x 1kg |

| Formula | g/l |
|--|------|
| Peptone | 2 |
| Yeast Extract | 0.2 |
| Glucose | 2 |
| KH ₂ PO ₄ | 1.9 |
| K ₂ HPO ₄ .3H ₂ O | 1.3 |
| MgO ₄ .anhydrous | 0.49 |
| Agar | 17 |

Suspend 24.9 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

VL6 MEDIUM INCLUDING GLUCOSE, ANIMAL COMPONENT FREE (ACF)

| SKU | Size |
|---------|---------|
| VL60101 | 250g |
| VL60102 | 1kg |
| VL60103 | 6 x 1kg |

VL6 is a complex medium for cultivation of *Discoideum dyctyostelium* based on Vegetable Peptone.

Formedium Ltd have recognised the need for a range of meat-free products. This has led to the development of VL6, an animal component free alternative medium compared to traditional Dicty media such as HL5 and HL5C.

VL6 is composed of a Vegetable peptone providing high molecular weight peptides and proteins as a nitrogen source. Yeast Extract is a source of vitamins, co-factors and carbohydrates. A Phosphate buffer is present to inhibit acidification of the medium during cell growth.

As most vegetable peptones contain almost no Tryptophane VL6 is supplemented with an extra quantity of this amino acid and some other amino acids. Essential trace elements and vitamins as present in FM and SIH media are added for those Dicty cultures needing additional nutritional for starting up vigorous growth or protein synthesis.

Suspend 35.95g in 1L of Distilled or De-ionised Water.

| Components | | |
|--------------------------------|-------|-----|
| Vegetable Peptone | 10 | g/L |
| Yeast extract | 7 | g/L |
| Potassium Dihydrogen Phosphate | 1.2 | g/L |
| Disodium Hydrogen Phosphate | 0.35 | g/L |
| Glucose | 12 | g/L |
| Trace elements | 0.1 | g/L |
| VL6 Amino acid supplement | 5.3 | g/L |
| | 35.95 | |



GHS07 Skin & Eye Irritation

The materials used in the production are in compliance with the European Directive 75/318/EEC as amended by Directive 1999/82/EC.

Therefore Formedium takes the position that this product is free of any risk in terms of Bovine Spongiform Encephalopathy (BSE) or Transmissible Spongiform Encephalopathy (TSE).

HYGROSCOPIC Store at Room Temperature
DO NOT BREATHE DUST Keep Container Tightly Closed
WARNING GHS-07 SKIN & EYE IRRITATION

VL6 MEDIUM WITHOUT GLUCOSE, ANIMAL COMPONENT FREE (ACF)

| SKU | Size |
|---------|---------|
| VL60201 | 250g |
| VL60202 | 1kg |
| VL60203 | 6 x 1kg |

VL6 is a complex medium for cultivation of *Discoideum dictyostelium* based on Vegetable Peptone.

Formedium Ltd have recognised the need for a range of meat-free products. This has led to the development of VL6, an animal component free alternative medium compared to traditional Dicty media such as HL5 and HL5C.

VL6 is composed of a Vegetable peptone providing high molecular weight peptides and proteins as a nitrogen source. Yeast Extract is a source of vitamins, co-factors and carbohydrates. A Phosphate buffer is present to inhibit acidification of the medium during cell growth.

As most vegetable peptones contain almost no Tryptophane VL6 is supplemented with an extra quantity of this amino acid and some other amino acids. Essential trace elements and vitamins as present in FM and SIH media are added for those Dicty cultures needing additional nutritionals for starting up vigorous growth or protein synthesis.

Suspend 23.95g in 1L of Distilled or De-ionised Water.

| Components | | |
|--------------------------------|-------|-----|
| Vegetable Peptone | 10 | g/L |
| Yeast extract | 7 | g/L |
| Potassium Dihydrogen Phosphate | 1.2 | g/L |
| Disodium Hydrogen Phosphate | 0.35 | g/L |
| Glucose | 12 | g/L |
| Trace elements | 0.1 | g/L |
| VL6 Amino acid supplement | 5.3 | g/L |
| | 35.95 | |



GHS07 Skin & Eye Irritation

The materials used in the production are in compliance with the European Directive 75/318/EEC as amended by Directive 1999/82/EC.

Therefore Formedium takes the position that this product is free of any risk in terms of Bovine Spongiform Encephalopathy (BSE) or Transmissible Spongiform Encephalopathy (TSE).

HYGROSCOPIC Store at Room Temperature
DO NOT BREATHE DUST Keep Container Tightly Closed
WARNING GHS-07 SKIN & EYE IRRITATION

HL5 MEDIUM WITHOUT GLUCOSE

| SKU | Size |
|---------|---------|
| HLB0101 | 250g |
| HLB0102 | 1000g |
| HLB0103 | 6 x 1kg |

| Formula | g/l |
|---------------|-----|
| Peptone | 14 |
| Yeast Extract | 7 |
| KH2PO4 | 0.5 |
| Na2HPO4 | 0.5 |

Suspend 22 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

HL5 MEDIUM INCLUDING GLUCOSE

| SKU | Size |
|---------|---------|
| HLG0101 | 250g |
| HLG0102 | 1000g |
| HLG0103 | 6 x 1kg |

| Formula | g/l |
|---------------|------|
| Peptone | 14 |
| Yeast Extract | 7 |
| Glucose | 13.5 |
| KH2PO4 | 0.5 |
| Na2HPO4 | 0.5 |

Suspend 35.5 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

HL5-C MEDIUM INCLUDING GLUCOSE

| SKU | Size |
|---------|---------|
| HLC0101 | 250g |
| HLC0102 | 1000g |
| HLC0103 | 6 x 1kg |

| Formula | g/l |
|----------------------------------|------|
| Peptone | 5 |
| Yeast Extract | 5 |
| Tryptone | 5 |
| KH ₂ PO ₄ | 1.2 |
| Na ₂ HPO ₄ | 0.35 |
| Glucose | 10 |

Suspend 26.55 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

HL5-C MEDIUM WITHOUT GLUCOSE

| SKU | Size |
|---------|---------|
| HLD0101 | 250g |
| HLD0102 | 1000g |
| HLD0103 | 6 x 1kg |

| Formula | g/l |
|----------------------------------|------|
| Peptone | 5 |
| Yeast Extract | 5 |
| Tryptone | 5 |
| KH ₂ PO ₄ | 1.2 |
| Na ₂ HPO ₄ | 0.35 |

Suspend 16.55 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

HL5 MEDIUM INCLUDING GLUCOSE SUPPLEMENTED WITH VITAMINS AND MICRO-ELEMENTS

| SKU | Size |
|------|---------|
| HLE1 | 250g |
| HLE2 | 1000g |
| HLE3 | 6 x 1kg |

HL5 supplemented with vitamins and micro-elements as present in FM and SIH media.

The addition of extra vitamins and micro-elements gives good results for cultures of Dicty who require additional nutritional elements for starting up vigorous growth or protein synthesis.

| Formula | g/l |
|----------------------------------|------|
| Peptone | 14 |
| Yeast Extract | 7 |
| Glucose | 13.5 |
| KH ₂ PO ₄ | 0.5 |
| Na ₂ HPO ₄ | 0.5 |
| FM Vitamins and Micro-elements | 0.01 |

Suspend 35.5 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

HL5 MEDIUM WITHOUT GLUCOSE SUPPLEMENTED WITH VITAMINS AND MICRO-ELEMENTS

| SKU | Size |
|------|---------|
| HLF1 | 250g |
| HLF2 | 1000g |
| HLF3 | 6 x 1kg |

HL5 Medium supplemented with vitamins and micro-elements as present in FM and SIH media.

The addition of extra vitamins and micro-elements gives good results for cultures of Dictyostelium Discoideum who require additional nutritional elements for starting up vigorous growth or protein synthesis.

| Formula | g/l |
|----------------------------------|------|
| Peptone | 14 |
| Yeast Extract | 7 |
| KH ₂ PO ₄ | 0.5 |
| Na ₂ HPO ₄ | 0.5 |
| FM Vitamins and Micro-elements | 0.01 |

Suspend 22 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

HL5-C MEDIUM INCLUDING GLUCOSE SUPPLEMENTED WITH VITAMINS AND MICRO-ELEMENTS

| SKU | Size |
|------|---------|
| HLH1 | 250g |
| HLH2 | 1kg |
| HLH3 | 6 x 1kg |

HL5-C supplemented with vitamins and micro-elements as present in FM and SIH media.

The addition of extra vitamins and micro-elements gives good results for cultures of Dicty who require additional nutritional elements for starting up vigorous growth or protein synthesis.

| Formula | g/l |
|----------------------------------|------|
| Peptone | 5 |
| Yeast Extract | 5 |
| Tryptone | 5 |
| KH ₂ PO ₄ | 1.2 |
| Na ₂ HPO ₄ | 0.35 |
| Glucose | 10 |
| FM Vitamins and Micro-elements | 0.01 |

Suspend 26.5 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

HL5-C MEDIUM WITHOUT GLUCOSE SUPPLEMENTED WITH VITAMINS AND MICRO-ELEMENTS

| SKU | Size |
|------|---------|
| HLI1 | 250g |
| HLI2 | 1kg |
| HLI3 | 6 x 1kg |

HL5-C supplemented with vitamins and micro-elements as present in FM and SIH media.

The addition of extra vitamins and micro-elements gives good results for cultures of Dicty who require additional nutritional elements for starting up vigorous growth or protein synthesis.



| Formula | g/l |
|----------------------------------|------|
| Peptone | 5 |
| Yeast Extract | 5 |
| Tryptone | 5 |
| KH ₂ PO ₄ | 1.2 |
| Na ₂ HPO ₄ | 0.35 |
| FM Vitamins and Micro-elements | 0.01 |

Suspend 16.55 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

LOFLO MEDIUM

| SKU | Size |
|--------|---------|
| LF0501 | 500g |
| LF1001 | 1kg |
| LF6001 | 6 x 1kg |

| Formula | g/l |
|--|------|
| Glucose | 11 |
| KH ₂ PO ₄ | 0.68 |
| Casein Peptone | 5 |
| NH ₄ Cl | 26.8 |
| MgCl ₂ | 37.1 |
| CaCl ₂ | 1.1 |
| FeCl ₃ | 8.11 |
| Na ₂ -EDTA | 4.84 |
| ZnSO ₄ | 2.30 |
| H ₃ BO ₃ | 1.11 |
| MnCl ₂ .4H ₂ O | 0.51 |
| CoCl ₂ | 0.17 |
| CuSO ₅ .5H ₂ O | 0.15 |
| (NH ₄) ₆ M ₀ 7O ₂₄ .4H ₂ O | 0.1 |

Suspend 16.8 gram powdered medium in 1 litre distilled water

Store dry at room temperature

Adjust to pH 6.5



GHS07 Skin & Eye Irritation

LOFLO MEDIUM SUPPLEMENTED WITH YEAST EXTRACT

| SKU | Size |
|---------|---------|
| LFG0501 | 500g |
| LFG1001 | 1kg |
| LFG6001 | 6 x 1kg |

| Formula | g/l |
|--|------|
| Glucose | 11 |
| KH ₂ PO ₄ | 0.68 |
| Casein Peptone | 5 |
| Yeast extract | 0.7 |
| NH ₄ Cl | 26.8 |
| MgCl ₂ | 37.1 |
| CaCl ₂ | 1.1 |
| FeCl ₃ | 8.11 |
| Na ₂ -EDTA | 4.84 |
| ZnSO ₄ | 2.30 |
| H ₃ BO ₃ | 1.11 |
| MnCl ₂ .4H ₂ O | 0.51 |
| CoCl ₂ | 0.17 |
| CuSO ₅ .5H ₂ O | 0.15 |
| (NH ₄) ₆ M ₀ 7O ₂₄ .4H ₂ O | 0.1 |

Suspend 17.5 gram powdered medium in 1 litre distilled water

Store dry at room temperature

Adjust to pH 6.5



GHS07 Skin & Eye Irritation

FM DEFINED MINIMAL MEDIA

Synthetic Defined Minimal Media

This media is based on well defined formulations of mineral salts, vitamins and amino acids.

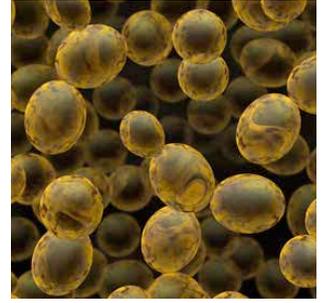
Two commonly used synthetic defined minimal Dictyostelium Discoideum media are FM and SIH.

FM medium developed by Franke and Kessin is used for transformation of Dictyostelium Discoideum and genomic studies. This formulation supports the growth of most strains that are capable of growing on HL5.

SIH medium is a newly developed modification of FM with regards to its amino acid composition. Aspartic acid is added. Tryptophane and Lysine concentrations are significantly increased, resulting in an increase of cell density up to 5×10^7 .

Both FM and SIH media are based on mineral salts in micro and macro concentrations supplemented with several vitamins. Besides these components, there is a large group of amino acids present. To facilitate genetic

studies Formedium™ offers complete formulations of FM and SIH as well as both media lacking various amino acids such as without Arginine, Glutamic Acid, Lysine and Methionine.



New to our range of synthetic media are FM and SIH without all amino acids. These two newly developed media combined with a range of amino acid drop-out mixtures gives the option to make every synthetic drop-out medium required for genetic studies.

Improvement of a synthetic medium for Dictyostelium Discoideum,
Sang-In Han, Karl Friebs and Erwin Flaschel,
Process Biochemistry, 39 (8), 925 - 930, 2004.

This product category includes:

- 21 FM Minimal Medium
- 22 FM Minimal medium w/o NH₄Cl
- 22 FM Minimal medium w/o Amino acids
- 23 FM Minimal medium w/o Amino acids and w/o Ammonium chloride
- 23 FM Minimal medium w/o Methionine
- 24 FM Minimal medium w/o Arginine and w/o Lysine
- 24 FM Minimal medium w/o Cysteine and w/o Methionine
- 25 FM Minimal medium w/o Glutamic acid and w/o Lysine
- 26 FM Amino acid drop-out mixtures
- 27 FM drop-out mixture, minus Arginine, 7600 mg/l
- 27 FM drop-out mixture, minus Cysteine, 8100 mg/l
- 27 FM drop-out mixture, minus Glutamic acid, 7800 mg/l
- 28 FM drop-out mixture, minus Lysine, 7400 mg/l
- 28 FM drop-out mixture, minus Methionine, 8000 mg/l
- 28 FM drop-out mixture, minus Arginine and w/o Cysteine, 7400 mg/l
- 29 FM drop-out mixture, minus Arginine and w/o Glutamic acid, 7100 mg/l
- 29 FM drop-out mixture, minus Arginine and w/o Lysine, 6700 mg/l
- 29 FM drop-out mixture, minus Arginine and w/o Methionine, 7300 mg/l
- 30 FM drop-out mixture, minus Cysteine and w/o Glutamic acid, 7600 mg/l
- 30 FM drop-out mixture, minus Cysteine and w/o Lysine, 7200 mg/l
- 30 FM drop-out mixture, minus Cysteine and w/o Methionine, 7800 mg/l
- 31 FM drop-out mixture, minus Glutamic acid and w/o Lysine, 6900 mg/l
- 31 FM drop-out mixture, minus Glutamic acid and w/o Methionine, 7500 mg/l
- 31 FM drop-out mixture, minus Lysine and w/o Methionine, 7100 mg/l

FM MINIMAL MEDIUM

| SKU | Size |
|---------|---------|
| FMM0101 | 250g |
| FMM0102 | 1kg |
| FMM0103 | 6 x 1kg |

| Formula | g/l |
|--|-----------------|
| Amino Acids | |
| Arg | 700 |
| Asp | 300 |
| Cys | 200 |
| GluA | 500 |
| Gly | 900 |
| His | 300 |
| Ile | 600 |
| Leu | 900 |
| Lys | 900 |
| Met | 300 |
| Phe | 500 |
| Pro | 800 |
| Thr | 500 |
| Trp | 200 |
| Val | 700 |
| Vitamins | |
| Biotin | 0.02 |
| Cyanocobalamin | 0.01 |
| Folic Acid | 0.2 |
| Lipoic Acid | 0.4 |
| Riboflavin | 0.5 |
| Thiamine | 0.6 |
| Micro Elements | |
| Na ₂ EDTA.2H ₂ O | 4.84 |
| ZnSO ₄ | 2.3 |
| H ₃ BO ₃ | 1.11 |
| MnCl ₂ .4H ₂ O | 0.51 |
| CoCl ₂ .6H ₂ O | 0.17 |
| CuSO ₄ .5H ₂ O | 0.15 |
| (NH ₄) ₆ Mo ₇ O ₂₄ .4H ₂ O | 0.1 |
| Minerals | |
| NH ₄ Cl | 53.5 |
| CaCl ₂ .2H ₂ O | 2.94 |
| FeCl ₃ | 16.2 |
| MgCl ₂ .6H ₂ O | 81.32 |
| KH ₂ PO ₄ | 870 |
| Carbon Source | |
| Glucose | 10000 |
| Total | 19334.87 |



GHS07 Skin & Eye Irritation

Suspend 19.3 gram powdered medium in 1 litre distilled water

Store dry at room temperature

FM MINIMAL MEDIUM W/O NH4CL

| SKU | Size |
|---------|---------|
| FMM0201 | 250g |
| FMM0202 | 1kg |
| FMM0203 | 6 x 1kg |

Suspend 19.3g powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

FM MINIMAL MEDIUM W/O AMINO ACIDS

| SKU | Size |
|---------|---------|
| FMM0501 | 250g |
| FMM0502 | 1kg |
| FMM0503 | 6 x 1kg |

Suspend 11.0g powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

FM MINIMAL MEDIUM W/O AMINO ACIDS AND W/O AMMONIUM CHLORIDE

| SKU | Size |
|---------|---------|
| FMM0601 | 250g |
| FMM0602 | 1kg |
| FMM0603 | 6 x 1kg |

Suspend 11.0 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

FM MINIMAL MEDIUM W/O METHIONINE

| SKU | Size |
|---------|---------|
| FMM0301 | 250g |
| FMM0302 | 1kg |
| FMM0303 | 6 x 1kg |

Suspend 19.0 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

FM MINIMAL MEDIUM W/O ARGININE AND W/O LYSINE

| SKU | Size |
|---------|---------|
| FMM0401 | 250g |
| FMM0402 | 1kg |
| FMM0403 | 6 x 1kg |

Suspend 17.7 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

FM MINIMAL MEDIUM W/O CYSTEINE AND W/O METHIONINE

| SKU | Size |
|---------|---------|
| FMM0701 | 250g |
| FMM0702 | 1000g |
| FMM0703 | 6 x 1kg |

Suspend 18.8 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

FM MINIMAL MEDIUM W/O GLUTAMIC ACID AND W/O LYSINE

| SKU | Size |
|---------|---------|
| FMM0801 | 250g |
| FMM0802 | 1kg |
| FMM0803 | 6 x 1kg |

Suspend 18.8 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

FM AMINO ACID DROP-OUT MIXTURES

| SKU | Size |
|---------|---------|
| FMM0101 | 250g |
| FMM0102 | 1kg |
| FMM0103 | 6 x 1kg |

FM Amino acid drop-out mixture is based on the Amino acids present in FM Minimal medium. These Amino acids form a basis for many “Drop-Out” mixtures to select for auxotrophic requirements and transformants. Each FM Drop-Out mixture contain all components except for one or two essential Amino acids, i.e. the “dropped out” supplements. FM Amino acids drop-out mixtures are used in combination with FM Minimal medium w/o Amino acids or FM Minimal medium w/o Amino acids and w/o Ammonium chloride to complete the medium.

Complete Supplement Mixture formulations are available in 25 gram and 250 gram pack sizes.

Please enquire about custom made formulations.



GHS07 Skin & Eye Irritation

| Formula | g/l |
|--------------------|------------------|
| Amino Acids | |
| Arg | 700 |
| Asp | 300 |
| Cys | 200 |
| GluA | 500 |
| Gly | 900 |
| His | 300 |
| Ile | 600 |
| Leu | 900 |
| Lys | 900 |
| Met | 300 |
| Phe | 500 |
| Pro | 800 |
| Thr | 500 |
| Trp | 200 |
| Val | 700 |
| Total | 8300 mg/l |

FM DROP-OUT MIXTURE, MINUS ARGININE, 7600 MG/L

| SKU | Size |
|-------|------|
| FMA47 | 100g |
| FMA48 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS CYSTEINE, 8100 MG/L

| SKU | Size |
|-------|------|
| FMA05 | 100g |
| FMA06 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS GLUTAMIC ACID, 7800 MG/L

| SKU | Size |
|-------|------|
| FMA08 | 100g |
| FMA09 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS LYSINE, 7400 MG/L

| SKU | Size |
|-------|------|
| FMA11 | 100g |
| FMA12 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS METHIONINE, 8000 MG/L

| SKU | Size |
|-------|------|
| FMA14 | 100g |
| FMA15 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS ARGININE AND W/O CYSTEINE, 7400 MG/L

| SKU | Size |
|-------|------|
| FMA17 | 100g |
| FMA18 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS ARGININE AND W/O GLUTAMIC ACID, 7100 MG/L

| SKU | Size |
|-------|------|
| FMA20 | 100g |
| FMA21 | 250g |



 GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS ARGININE AND W/O LYSINE, 6700 MG/L

| SKU | Size |
|-------|------|
| FMA23 | 100g |
| FMA24 | 250g |



 GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS ARGININE AND W/O METHIONINE, 7300 MG/L

| SKU | Size |
|-------|------|
| FMA26 | 100g |
| FMA27 | 250g |



 GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS CYSTEINE AND W/O GLUTAMIC ACID, 7600 MG/L

| SKU | Size |
|-------|------|
| FMA29 | 100g |
| FMA30 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS CYSTEINE AND W/O LYSINE, 7200 MG/L

| SKU | Size |
|-------|------|
| FMA32 | 100g |
| FMA33 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS CYSTEINE AND W/O METHIONINE, 7800 MG/L

| SKU | Size |
|-------|------|
| FMA35 | 100g |
| FMA36 | 250g |



GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS GLUTAMIC ACID AND W/O LYSINE, 6900 MG/L

| SKU | Size |
|-------|------|
| FMA38 | 100g |
| FMA39 | 250g |



 GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS GLUTAMIC ACID AND W/O METHIONINE, 7500 MG/L

| SKU | Size |
|-------|------|
| FMA41 | 100g |
| FMA42 | 250g |



 GHS07 Skin & Eye Irritation

FM DROP-OUT MIXTURE, MINUS LYSINE AND W/O METHIONINE, 7100 MG/L

| SKU | Size |
|-------|------|
| FMA44 | 100g |
| FMA45 | 250g |



 GHS07 Skin & Eye Irritation

SIH DEFINED MINIMAL MEDIA

Dictyostelium Discoideum

Synthetic Defined Minimal Media

This media is based on well defined formulations of mineral salts, vitamins and amino acids.

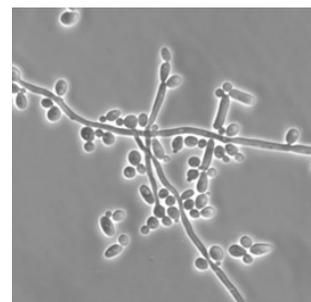
Two commonly used synthetic defined minimal Dictyostelium Discoideum media are FM Media and SIH Media.

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SIH medium is a newly developed modification of FM with regards to its amino acid composition. Aspartic acid is added. Tryptophane and Lysine concentrations are significantly increased, resulting in an increase of cell density up to 5×10^7 .

Both FM and SIH media are based on mineral salts in micro and macro concentrations supplemented with several vitamins. Besides these components, there is a large group of amino acids present. To facilitate genetic studies ForMedium™ offers complete formulations of FM and SIH as well as both media lacking various amino acids such as without Arginine, Glutamic Acid, Lysine and Methionine.

New to our range of synthetic media are FM and SIH without all amino acids. These two newly developed media, combined with a range of amino acid drop-out mixtures gives the option to make every synthetic drop-out medium required for genetic studies.



Improvement of a synthetic medium for Dictyostelium discoideum, Sang-In Han, Karl Friebs and Erwin Flaschel, Process Biochemistry, 39 (8), 925 - 930, 2004

This product category includes:

- 33 SIH Medium
- 34 SIH medium w/o NH₄Cl
- 34 SIH medium w/o Amino acids
- 35 SIH medium w/o Amino acids and w/o Ammonium chloride
- 35 SIH medium w/o Methionine
- 36 SIH medium w/o Arginine and w/o Lysine
- 36 SIH medium w/o Cysteine and w/o Methionine
- 37 SIH medium w/o Glutamic acid and w/o Lysine
- 38 SIH Amino acid drop-out mixture
- 39 SIH drop-out mixture, minus Arginine, 8495 mg/l
- 39 SIH drop-out mixture, minus Cysteine, 8895 mg/l
- 39 SIH drop-out mixture, minus Glutamic acid, 8650 mg/l
- 40 SIH drop-out mixture, minus Lysine, 7945 mg/l
- 40 SIH drop-out mixture, minus Methionine, 8845 mg/l
- 40 SIH drop-out mixture, minus Arginine and w/o Cysteine, 8195 mg/l
- 41 SIH drop-out mixture, minus Arginine and w/o Glutamic acid, 7950 mg/l
- 41 SIH drop-out mixture, minus Arginine and w/o Lysine, 7245 mg/l
- 41 SIH drop-out mixture, minus Arginine and w/o Methionine, 8145 mg/l
- 42 SIH drop-out mixture, minus Cysteine and w/o Glutamic acid, 8350 mg/l
- 42 SIH drop-out mixture, minus Cysteine and w/o Lysine, 7645 mg/l
- 42 SIH drop-out mixture, minus Cysteine and w/o Methionine, 8545 mg/l
- 43 SIH drop-out mixture, minus Glutamic acid and w/o Lysine, 7400 mg/l
- 43 SIH drop-out mixture, minus Glutamic acid and w/o Methionine, 8300 mg/l
- 43 SIH drop-out mixture, minus Lysine and w/o Methionine, 7595 mg/l

SIH MEDIUM

| SKU | Size |
|---------|---------|
| SIH0101 | 250g |
| SIH0102 | 1kg |
| SIH0103 | 6 x 1kg |

| Formula | g/l |
|---|--------------|
| Amino Acids | |
| Arg | 700 |
| Asp | 300 |
| Asp A | 150 |
| Cys | 300 |
| GluA | 545 |
| Gly | 900 |
| His | 300 |
| Ile | 600 |
| Leu | 900 |
| Lys | 1250 |
| Met | 350 |
| Phe | 550 |
| Pro | 800 |
| Thr | 500 |
| Trp | 350 |
| Val | 700 |
| Vitamins | |
| Biotin | 0.02 |
| Cyanocobalamin | 0.01 |
| Folic Acid | 0.2 |
| Lipoic Acid | 0.4 |
| Riboflavin | 0.5 |
| Thiamine | 0.6 |
| Micro Elements | |
| Na ₂ EDTA.2H ₂ O | 4.84 |
| ZnSO ₄ | 2.3 |
| H ₃ BO ₃ | 1.11 |
| MnCl ₂ .4H ₂ O | 0.51 |
| CoCl ₂ .6H ₂ O | 0.17 |
| CuSO ₄ .5H ₂ O | 0.15 |
| (NH₄)₆Mo₇O₂₄.4H₂O | 0.1 |
| Minerals | |
| NH ₄ Cl | 53.5 |
| CaCl ₂ .2H ₂ O | 2.94 |
| FeCl ₃ | 16.2 |
| MgCl ₂ .6H ₂ O | 81.32 |
| KH ₂ PO ₄ | 870 |
| Carbon Source | |
| Glucose | 10000 |
| Total | 20326 |



 GHS07 Skin & Eye Irritation

SIH medium, developed by Hanh, Friehs and Flaschel (2004), is the next step in the development of synthetic media designed to grow *D. discoideum* in high cell densities.

SIH medium is an improved version of FM medium, as developed by Frank and Kessin (1977).

The main difference between SIH and FM is the novel addition of Aspartic acid (1.1 mM) and increased levels of Lysine (8.5 mM) and Tryptophane (1.7 mM). Concentrations of Cysteine, Glutamic acid, Methionine, Phenylalanine, Threonine are slightly increased as well in SIH.

The alterations in amino acid formulation of SIH medium resulted in a more even and better amino acid utilisation. Cell density of *D. discoideum* rose up to levels in excess of 5×10^7 cells compared to FM medium with cell density levels of 3×10^7 .

Improvement of a synthetic medium for *Dictyostelium discoideum*, Sang-In Han, Karl Friehs and Erwin Flaschel, *Process Biochemistry*, 39 (8), 925, 930, 2004.

Cultivation of *Dictyostelium discoideum* on an improved synthetic medium in a conventional bioreactor. Sang-In Han, Karl Friehs and Erwin Flaschel, *Process Biochemistry*, 39, 585 - 589, 2004.

Suspend 20.3 gram powdered medium in 1 litre distilled water
Store dry at room temperature

SIH MEDIUM W/O NH4CL

| SKU | Size |
|---------|---------|
| SIH0501 | 250g |
| SIH0502 | 1kg |
| SIH0503 | 6 x 1kg |

Suspend 20.3 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SIH MEDIUM W/O AMINO ACIDS

| SKU | Size |
|---------|---------|
| SIH0601 | 250g |
| SIH0602 | 1kg |
| SIH0603 | 6 x 1kg |

Suspend 11.1 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SIH MEDIUM W/O AMINO ACIDS AND W/O AMMONIUM CHLORIDE

| SKU | Size |
|---------|---------|
| SIH0701 | 250g |
| SIH0702 | 1kg |
| SIH0703 | 6 x 1kg |

Suspend 11.1 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SIH MEDIUM W/O METHIONINE

| SKU | Size |
|---------|---------|
| SIM0101 | 250g |
| SIM0102 | 1kg |
| SIM0103 | 6 x 1kg |

Suspend 20.0 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SIH MEDIUM W/O ARGININE AND W/O LYSINE

| SKU | Size |
|---------|---------|
| SIH1001 | 250g |
| SIH1002 | 1kg |
| SIH1003 | 6 x 1kg |

Suspend 18.4 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SIH MEDIUM W/O CYSTEINE AND W/O METHIONINE

| SKU | Size |
|---------|---------|
| SIH0801 | 250g |
| SIH0802 | 1kg |
| SIH0803 | 6 x 1kg |

Suspend 19.7 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SIH MEDIUM W/O GLUTAMIC ACID AND W/O LYSINE

| SKU | Size |
|---------|---------|
| SIH0901 | 250g |
| SIH0902 | 1kg |
| SIH0903 | 6 x 1kg |

Suspend 18.6 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

SIH AMINO ACID DROP-OUT MIXTURE

| SKU | Size |
|-------|------|
| SHA02 | 100g |
| SHA03 | 250g |

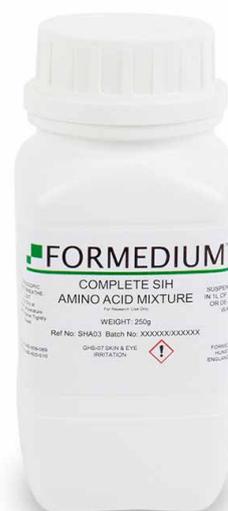
SIH Amino acid drop-out mixture is based on the Amino acids present in SIH Minimal medium. These Amino acids form a basis for many “Drop-Out” mixtures to select for auxotrophic requirements and transformants. Each SIH Drop-Out mixture contain all components except for one or two essential Amino acids, i.e. the “dropped out” supplements. SIH Amino acids drop-out mixtures are used in combination with SIH Minimal medium w/o Amino acids or SIH Minimal medium w/o Amino acids and w/o Ammonium chloride to complete the medium.

Complete Supplement Mixture formulations are available in 25 gram and 250 gram pack sizes.

Please enquire about custom made formulations.

Complete SIH Amino acid mixture, 9195 mg/l

| Formula | g/l |
|--------------------|------------------|
| Amino Acids | |
| Arg | 700 |
| Asp | 300 |
| Asp A | 150 |
| Cys | 300 |
| GluA | 545 |
| Gly | 900 |
| His | 300 |
| Ile | 600 |
| Leu | 900 |
| Lys | 1250 |
| Met | 350 |
| Phe | 550 |
| Pro | 800 |
| Thr | 500 |
| Trp | 350 |
| Val | 700 |
| Total | 9195 mg/l |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS ARGININE, 8495 MG/L

| SKU | Size |
|-------|------|
| SHA05 | 100g |
| SHA06 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS CYSTEINE, 8895 MG/L

| SKU | Size |
|-------|------|
| SHA08 | 100g |
| SHA09 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS GLUTAMIC ACID, 8650 MG/L

| SKU | Size |
|-------|------|
| SHA11 | 100g |
| SHA12 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS LYSINE, 7945 MG/L

| SKU | Size |
|-------|------|
| SHA14 | 100g |
| SHA15 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS METHIONINE, 8845 MG/L

| SKU | Size |
|-------|------|
| SHA17 | 100g |
| SHA18 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS ARGININE AND W/O CYSTEINE, 8195 MG/L

| SKU | Size |
|-------|------|
| SHA20 | 100g |
| SHA21 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS ARGININE AND W/O GLUTAMIC ACID, 7950 MG/L

| SKU | Size |
|-------|------|
| SHA23 | 100g |
| SHA24 | 250g |



 GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS ARGININE AND W/O LYSINE, 7245 MG/L

| SKU | Size |
|-------|------|
| SHA26 | 100g |
| SHA27 | 250g |



 GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS ARGININE AND W/O METHIONINE, 8145 MG/L

| SKU | Size |
|-------|------|
| SHA29 | 100g |
| SHA30 | 250g |



 GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS CYSTEINE AND W/O GLUTAMIC ACID, 8350 MG/L

| SKU | Size |
|-------|------|
| SHA32 | 100g |
| SHA33 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS CYSTEINE AND W/O LYSINE, 7645 MG/L

| SKU | Size |
|-------|------|
| SHA35 | 100g |
| SHA36 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS CYSTEINE AND W/O METHIONINE, 8545 MG/L

| SKU | Size |
|-------|------|
| SHA38 | 100g |
| SHA39 | 250g |



GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS GLUTAMIC ACID AND W/O LYSINE, 7400 MG/L

| SKU | Size |
|-------|------|
| SHA41 | 100g |
| SHA42 | 250g |



 GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS GLUTAMIC ACID AND W/O METHIONINE, 8300 MG/L

| SKU | Size |
|-------|------|
| SHA44 | 100g |
| SHA45 | 250g |



 GHS07 Skin & Eye Irritation

SIH DROP-OUT MIXTURE, MINUS LYSINE AND W/O METHIONINE, 7595 MG/L

| SKU | Size |
|-------|------|
| SHA47 | 100g |
| SHA48 | 250g |



 GHS07 Skin & Eye Irritation

YEAST MEDIA COMPONENTS

Formedium™ manufactures a large range of media for yeast, fungi and bacterial cell cultures. Part of these media are nutritional elements like Agar, Casamino acids, Glucose, Peptone, Tryptone and Yeast extract.

These nutrients are also offered by Formedium™ as separate media components to allow the researcher to select the optimal concentration of each component for a specific strain.

All products offered are used by Formedium™ are of high quality and purity and used to produce an extended range of cell culture media.



This product category includes:

- 45 Agar
- 45 L- Arabinose
- 46 Malt Extract
- 46 Agar Granulated, Bacteriological grade
- 47 Casamino Acids
- 47 D(+) - Galactose
- 48 D(+) - Glucose Anhydrous
- 48 D(+) - Lactose monohydrate
- 49 Peptone
- 50 Potato Extract
- 50 D(+) - Raffinose Pentahydrate
- 51 Sodium Chloride
- 51 D(+) - Sorbitol
- 52 Tryptone
- 52 Yeast Extract, Powder
- 53 Yeast Extract, Micro Granulated

AGAR

| SKU | Size |
|-------|---------|
| AGA01 | 250g |
| AGA02 | 500g |
| AGA03 | 1000g |
| AGA04 | 6 x 1kg |

Agar is natural product derived from seaweed. During the production process all impurities are carefully removed to obtain an agar with a high gel strength, excellent clarity and low mineral content. The result is an agar well suited for cell cultures.

Store dry at room temperature



GHS07 Skin & Eye Irritation

L- ARABINOSE

| SKU | Size |
|--------|------|
| ARA001 | 100g |
| ARA005 | 500g |
| ARA010 | 1kg |

C5H10O5 = 150.13

Purity HPLC 99%

Purity TLC Single spot

Water < 0.3%

White Crystalline powder

Store dry at room temperature



GHS07 Skin & Eye Irritation

MALT EXTRACT

| SKU | Size |
|-------|------|
| MAL03 | 1kg |

Malt extract is prepared from Malt by extracting the soluble products from sprouted grain.

The product contains a mix of carbohydrates (mainly maltose) and growth factors.

Solubility in water at 3 % Complete
pH (3 % solution) 4.8 - 5.8

Loss on drying ≤ 6.0 %

Reducing sugars (as maltose) ≥ 60.0 %

Residue on ignition ≤ 4.5 %

Chloride (as NaCl) ≤ 1.0 %

Store dry at room temperature



GHS07 Skin & Eye Irritation

AGAR GRANULATED, BACTERIOLOGICAL GRADE

| SKU | Size |
|-------|---------|
| AGR02 | 250g |
| AGR05 | 500g |
| AGR10 | 1000g |
| AGR60 | 6 x 1kg |

Agar Granulated, Bacteriological grade is a fine granulated agar with excellent characteristics for bacteriological growth.

Due to the fine granule structure of this agar dusting while handling is very low.

Store dry at room temperature



GHS07 Skin & Eye Irritation

CASAMINO ACIDS

| SKU | Size |
|-------|---------|
| CAS01 | 250g |
| CAS02 | 500g |
| CAS03 | 1000g |
| CAS04 | 6 x 1kg |

Casamino Acids are manufactured by a controlled acid hydrolysis of casein . Hydrolysis is not completed until all the nitrogen in the casein is converted to amino acids or other compounds of relative chemical simplicity. As a result of the acid hydrolysis process all vitamins and growth factors present in casein are destroyed.

Due to the low sodium chloride concentration ForMedium™ Casamino Acids are well suited for cultivation of yeast cells.

Store dry at room temperature



 GHS07 Skin & Eye Irritation

D(+)- GALACTOSE

| SKU | Size |
|--------|------|
| ARA001 | 100g |
| ARA005 | 500g |
| ARA010 | 1kg |

C6H12O6 = 180.16

Purity HPLC >99%

Water < 0.3%

White Crystalline powder

Store dry at room temperature



 GHS07 Skin & Eye Irritation

D(+) - GLUCOSE ANHYDROUS

| SKU | Size |
|-------|---------|
| GLU01 | 250g |
| GLU02 | 500g |
| GLU03 | 1000g |
| GLU04 | 6 x 1kg |

C6H12O6 = 180

A fine white crystalline quality with excellent properties for cell culture.

Store dry at room temperature



GHS07 Skin & Eye Irritation

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D(+) - LACTOSE MONOHYDRATE

| SKU | Size |
|-------|---------|
| LAC02 | 1000g |
| LAC03 | 6 x 1kg |

C12H22O6.2H2O = 360.2

Complies to Ph. Eur.

White Crystalline powder

Store dry at room temperature



GHS07 Skin & Eye Irritation

PEPTONE

| SKU | Size |
|-------|---------|
| PEP01 | 250g |
| PEP02 | 500g |
| PEP03 | 1000g |
| PEP04 | 6 x 1kg |

Peptone is a spray dried powder, manufactured by a controlled enzymatic hydrolysis of animal tissue. The most commonly used enzymes are pepsin, papain and pancreatin. The latter containing trypsin.

Pepsin will cut the peptide chain anywhere there is a phenylalanine or leucine bond.

Papain cuts in the peptide chain adjacent to arginine, lysine, phenylalanine and glycine. Pancreatin has its action at arginine, lysine, tyrosine, tryptophan, phenylalanine and leucine bonds.

The tissues are hydrolysed to produce straw coloured peptones which are highly nutritious and clearly soluble in water. Peptones contain a mix of peptides, free amino acids and growth factors.

Due to the low sodium chloride concentration ForMedium™ Pepton is well suited for cultivation of yeast cells.

Store dry at room temperature



GHS07 Skin & Eye Irritation

POTATO EXTRACT

| SKU | Size |
|-------|---------|
| PTE01 | 250g |
| PTE02 | 500g |
| PTE03 | 1000g |
| PTE04 | 6 x 1kg |

Potato extract is a mixture of potato proteins, manufactured by controlled enzymatic hydrolysis. The extract is an excellent nitrogen source for bacteria, yeasts and fungi. Potato extract is rich in vitamins and minerals and supports a vigorous growth of micro-organisms.

Store dry at room temperature



GHS07 Skin & Eye Irritation

D(+) - RAFFINOSE PENTAHYDRATE

| SKU | Size |
|-------|------|
| RAF01 | 100g |
| RAF02 | 250g |
| RAF03 | 500g |
| RAF04 | 1kg |

$C_{18}H_{32}O_{16} \cdot 5H_2O = 594.5$

Purity HPLC >99%

White powder

Store dry at room temperature



GHS07 Skin & Eye Irritation

SODIUM CHLORIDE

| SKU | Size |
|-------|---------|
| NAC02 | 1000g |
| NAC03 | 6 x 1kg |

NaCl = 58.4

Complies to Ph. Eur and USP

Heavy metals < 5 ppm

Ferrocyanides

A fine white crystalline quality with excellent properties for cell culture.

Store dry at room temperature



GHS07 Skin & Eye Irritation

D(+)-SORBITOL

| SKU | Size |
|-------|------|
| SOR02 | 1kg |
| SOR03 | 5kg |

C6H14O6 = 182.17

Complies to Ph. Eur.

White crystalline powder.

Store dry at room temperature



GHS07 Skin & Eye Irritation

TRYPTONE

| SKU | Size |
|-------|---------|
| TRP01 | 250g |
| TRP02 | 500g |
| TRP03 | 1000g |
| TRP04 | 6 x 1kg |

Enzymatic digest of casein

Tryptone is a pancreatic digest of casein. Casein is the main protein of milk and is a rich source of amino acid nitrogen. Amongst all amino acids especially Tryptophan is present in high concentrations.

Due to the rich nutritional properties, Tryptone is added to media as an accelerator to increase the yield of organisms and is recommended where a rapid and luxuriant growth of micro organisms is required.

Store dry at room temperature



GHS07 Skin & Eye Irritation

YEAST EXTRACT, POWDER

| SKU | Size |
|-------|---------|
| YEA01 | 250g |
| YEA02 | 500g |
| YEA03 | 1000g |
| YEA04 | 6 x 1kg |

Yeast Extract is a spray dried extract manufactured by complete autolysis, i.e. a transformation of proteins into peptides, and amino acids, implemented through the proteolytic enzymes present in yeast cells.

The cell membranes are discarded, enabling completely soluble yeast extracts to be obtained. Besides peptides and amino acids yeast extract also contains purine and pyrimidine bases, carbohydrates and water soluble vitamins of B group.

Sodium Chloride concentration of Formedium™ Yeast Extract is low and also therefore well suited for cultivation of yeast cells.

Due to its carbohydrate content, typically 10%, yeast extract is not suitable for media intended for the study of sugar fermentation.



GHS07 Skin & Eye Irritation

Store dry at room temperature

YEAST EXTRACT, MICRO GRANULATED

| SKU | Size |
|-------|-------|
| YEM01 | 250g |
| YEM02 | 500g |
| YEM03 | 1000g |
| YEM04 | 6kg |

The micro granulated presentation of Yeast extract considerably limits the emission of dust, gives the product its free-flowing aspect and allows it to dissolve more rapidly in water.

All other specifications see Yeast extract, Powder.

Store dry at room temperature



GHS07 Skin & Eye Irritation



Tel: 00 44 (0) 1485 609069
Fax: 00 44 (0) 1485 600510
Email: sales@formedium.com

www.formedium.com

Unit 1B Hunstanton
Commercial Park
Hunstanton, Norfolk
PE365JQ
United Kingdom