

D-MEM (Dulbecco's Modified Eagle Medium)

Product Name	Form	Volume	Code	L-Gln	Ph.Red	HEPES	NaHCO ₃
D-MEM (Low Glucose)	Liquid	500 mL	16003550	○	○	—	○
D-MEM (High Glucose)	Liquid	500 mL	16003560	○	○	—	○

RPMI 1640

Product Name	Form	Volume	Code	L-Gln	Ph.Red	HEPES	NaHCO ₃
RPMI 1640	Liquid	500 mL	16005005	—	○	—	○
RPMI 1640	Liquid	500 mL	16005050	○	○	—	○

Ham's F-12

Product Name	Form	Volume	Code	L-Gln	Ph.Red	HEPES	NaHCO ₃
Ham's F-12	Liquid	500 mL	16006250	○	○	—	○

D-MEM/F-12 (1:1)

Product Name	Form	Volume	Code	L-Gln	Ph.Red	HEPES	NaHCO ₃
D-MEM/F-12 (1:1)	Liquid	500 mL	16007100	○	○	—	○

Eagle's MEM (Minimum Essential Media)

Product Name	Form	Volume	Code	L-Gln	Ph.Red	HEPES	NaHCO ₃
Eagle's MEM (Earle's)	Liquid	500 mL	16006305	○	○	—	○

Alpha MEM (Alpha Modification of Eagle's MEM)

Product Name	Form	Volume	Code	L-Gln	Ph.Red	HEPES	NaHCO ₃
Alpha MEM	Liquid	500 mL	16002950	○	○	—	○

Physiologically Isotonic Buffered Salt Solution

Product Name	Form	Volume	Code	Notes
D-PBS(−)	Liquid	500 mL	16220015	Ca ²⁺ and Mg ²⁺ free
10× D-PBS(−)	Liquid	500 mL	16220105	Ca ²⁺ and Mg ²⁺ free
HBSS(−)	Liquid	500 mL	16229015	Ca ²⁺ and Mg ²⁺ free
HBSS(+)(w/o Phenol Red)	Liquid	500 mL	16230020	Ca ²⁺ and Mg ²⁺ free, Phenol red-free

Supplements

Product Name	Form	Volume	Code	Notes
MEM Vitamin Solution (100×)	Liquid (Frozen)	100 mL	16222004	Add at 1% (v/v) when preparing Eagle's MEM. It is also used as a nutrient supplement during cell culture.
MEM Amino Acid Solution (50×)	Liquid (Frozen)	100 mL	16223004	Add at 2% (v/v) when preparing Alpha-MEM. It is also used as a nutrient supplement during cell culture.

Gas-Permeable Cell Culture Bags

Product Name	Package Size	Code	Recommended Culture Volume
Maccell-A	10 bags/package	16087532	Suitable for pilot-scale suspension culture volumes up to 1,500 mL.
KBM W Bag	1 bag	16087431	Suitable for pilot-scale suspension culture volumes up to 1,500 mL.
TAZETTA-F	10 bags (individually packaged)	16087520	Suitable for suspension culture volumes ranging from 25 mL to 300 mL.

D-MEM (Dulbecco's Modified Eagle Medium)

Description

Dulbecco and Freeman modified Eagle's Basal Medium (BME) in 1959 for the cultivation of mouse embryonic cells, resulting in Dulbecco's Modified Eagle's Medium (D-MEM). D-MEM is characterized by fourfold higher concentrations of amino acids and vitamins compared with the original formulation. A high-glucose formulation containing 4.5 times the original glucose concentration is also available and is widely used for the high-density culture of various cell types.

Kohjin Bio offers two D-MEM formulations: low-glucose (1,000 mg/L) and high-glucose (4,500 mg/L), both containing L-glutamine.

Note: These products are for research use only and are not intended for therapeutic use in humans or animals.



Components	Low Glucose (w/ L-Gln)	High Glucose (w/ L-Gln)
Product Code	16003550	16003560
Storage	2–8° C	
Shelf Life	9 months, including the month of manufacture	
Inorganic Salts (mg/L)		
Calcium Chloride (anhydrous)	200.0	200.0
Magnesium Sulfate (anhydrous)	97.67	97.67
Ferric Nitrate (III) · 9H ₂ O	0.1	0.1
Potassium Chloride	400.0	400.0
Sodium Chloride	6400.0	6400.0
Sodium Bicarbonate	3700.0	3700.0
Sodium Phosphate Monobasic (anhydrous)	108.7	108.7
Amino Acids (mg/L)		
L-Arginine HCl	84.0	84.0
L-Cystine	48.34	48.34
L-Glutamine	584.0	584.0
Glycine	30.0	30.0
L-Histidine HCl · H ₂ O	42.0	42.0
L-Isoleucine	105.0	105.0
L-Leucine	105.0	105.0
L-Lysine HCl	146.0	146.0
L-Methionine	30.0	30.0
L-Phenylalanine	66.0	66.0
L-Serine	42.0	42.0
L-Threonine	95.0	95.0
L-Tryptophan	16.0	16.0
L-Tyrosine	71.59	71.59
L-Valine	94.0	94.0

Vitamins (mg/L)		
Choline Chloride	4.0	4.0
Folic Acid	4.0	4.0
D-Pantothenic Acid · ½Ca	4.0	4.0
myo-Inositol	7.2	7.2
Niacinamide	4.0	4.0
Pyridoxine Hydrochloride	4.0	4.0
Riboflavin	0.4	0.4
Thiamine HCl	4.0	4.0
Other Components (mg/L)		
D-Glucose	1000.0	4500.0
Phenol Red	15.0	15.0
Sodium Pyruvate	110.0	—
Specifications		
Appearance	Red transparent liquid	
Osmolality *1	335 ± 15 mOsm/kg H ₂ O	
pH *2	7.3 ± 0.3 *3	
Sterilization	Membrane filtration (0.2 µm)	
Sterility *4	Negative	
Mycoplasma *5	Negative	
Endotoxin *6	≤ 0.3 EU/mL	
Cell Proliferation *7	Cell proliferation comparable to the control medium	

*1 Freezing point depression
*2 Glass electrode
*3 After 5% CO₂ / 37°C exposure
*4 TGC & SCD media, 14 days
*5 MycoTrim® TC *6 Limulus assay
*7 Vero cells, 5% FBS + L-Gln (584 mg/)

D-PBS Dulbecco's Phosphate Buffered Saline

HBSS Hanks' Balanced Salt Solutions

Description

D-PBS

Dulbecco and Vogt developed D-PBS in 1957 by improving conventional physiological saline. It is a buffered saline solution that maintains osmotic pressure balance and neutral pH. Its osmotic pressure, ionic composition, and pH closely match mammalian body fluids, making it ideal for pre-treatment of tissues, organs, and cells. D-PBS(-) (without Ca²⁺/Mg²⁺) contains only inorganic salts and is especially used for trypsin-based cell dissociation, washing and diluting culture reagents.

HBSS

Hanks improved conventional physiological saline to develop HBSS in 1976. HBSS adds sodium bicarbonate and D-glucose to the D-PBS base, and is widely used in tissue culture and physiology. It is the most fundamental balanced salt solution for maintaining cell metabolic function during transport or pre-treatment.

Note: These products are for research use only and are not intended for therapeutic use in humans or animals.



Component	D-PBS(−)	10× D-PBS(−)	HBSS(−)	HBSS(+) (w/o Phenol Red)
Product Code	16220015	16220105	16229015	16230020
Storage	15–25°C			
Shelf Life	24 months, including the month of manufacture			
Inorganic Salts (mg/L)				
Calcium Chloride (anhydrous)	—	—	—	140.0
Magnesium Chloride · 6H ₂ O	—	—	—	100.0
Magnesium Sulfate · 7H ₂ O	—	—	—	100.0
Potassium Chloride	200.0	2000.0	400.0	400.0
Potassium Phosphate Monobasic	200.0	2000.0	60.0	60.0
Sodium Chloride	8000.0	80000.0	8000.0	8000.0
Sodium Bicarbonate	—	—	350.0	350.0
Sodium Phosphate Dibasic (anhydrous)	1150.0	11500.0	47.9	47.9
Other Components (mg/L)				
D-Glucose	—	—	1000.0	1000.0
Phenol Red	—	—	10.0	—
Specifications				
Appearance	Colorless transparent		Red transparent	Colorless transparent
Osmolality *1	280 ± 15 mOsm/kg H ₂ O	280 ± 15 *2	280 ± 15 mOsm/kg H ₂ O	
pH *3	7.4 ± 0.3	7.4 ± 0.3 *2	7.3 ± 0.2	
Sterilization	Membrane filtration (0.2 μm pore)			
Sterility *4	Negative			
Mycoplasma *5	Negative			
Endotoxin *6	≤ 0.1 EU/mL			

*1 Freezing point depression
*2 Diluted 10x with purified water
*3 Measured by glass electrode method
*4 TGC & SCD media, 14 days
*5 MycoTrim® TC
*6 Limulus assay

Ham's F-12

Description

Ham developed F-12 in 1965 using colony formation of CHO, HeLa, and mouse L cells as endpoints. F-12 contains trace metals (Fe, Cu, Zn), lipids, and nucleic acid components. It is widely used as a base medium for various synthetic media.

Kohjin Bio offers F-12 medium containing L-glutamine, as listed in the table below.

Note: These products are for research use only and are not intended for therapeutic use in humans or animals.



Component	w/ L-Gln
Product Code	16006250
Storage	2–8°C
Shelf Life	9 months, including the month of manufacture
Inorganic Salts (mg/L)	
Calcium Chloride (anhydrous)	33.22
Magnesium Chloride (anhydrous)	57.22
Potassium Chloride	223.6
Sodium Chloride	7599.0
Sodium Bicarbonate	1176.0
Sodium Phosphate Dibasic (anhydrous)	142.0
Amino Acids (mg/L)	
L-Alanine	8.9
L-Arginine HCl	211.0
L-Asparagine · H ₂ O	15.0
L-Aspartic Acid	13.0
L-Cysteine HCl · H ₂ O	35.0
L-Glutamic Acid	14.7
L-Glutamine	146.0
Glycine	7.5
L-Histidine HCl · H ₂ O	21.0
Isoleucine	4.0
L-Leucine	13.0
Lysine HCl	36.5
L-Methionine	4.5
L-Phenylalanine	5.0
L-Proline	34.5
L-Serine	10.5
L-Threonine	12.0
L-Tryptophan	2.0
L-Tyrosine	5.37
L-Valine	11.7

Vitamins (mg/L)	
D-Biotin	0.0073
Choline Chloride	14.0
Cyanocobalamin	1.4
Folic Acid	1.3
D-Pantothenic Acid · ½Ca	0.5
myo-Inositol	18.0
Niacinamide	0.04
Pyridoxine HCl	0.06
Riboflavin	0.04
Thiamine HCl	0.3
Ferrous Sulfate (II) · 5H ₂ O	0.0025
Ferric Sulfate (II) · 7H ₂ O	0.83
Zinc Sulfate · 7H ₂ O	0.86
Other Components (mg/L)	
D-Glucose	1802.0
Hypoxanthine	4.081
Linoleic Acid	0.08
DL-α-Lipoic Acid	0.21
Phenol Red	1.2
Putrescine · 2HCl	0.161
Sodium Pyruvate	110.0
Thymidine	0.7
Specifications	
Appearance	Light red–pink transparent liquid
Osmolality *1	300 ± 15 mOsm/kg H ₂ O
pH *2	7.3 ± 0.3 *3
Sterilization	Membrane filtration (0.2 µm)
Sterility *4	Negative
Mycoplasma *5	Negative
Endotoxin *6	≤ 0.3 EU/mL
Cell Proliferation *7	Promotes growth vs. control

*1 Freezing point depression
*2 Glass electrode
*3 After 5% CO₂ / 37°C exposure
*4 TGC & SCD media, 14 days
*5 MycoTrim® TC
*6 Limulus assay
*7 CHO-K1 cells, 5% FBS + L-Gln (146 mg/)

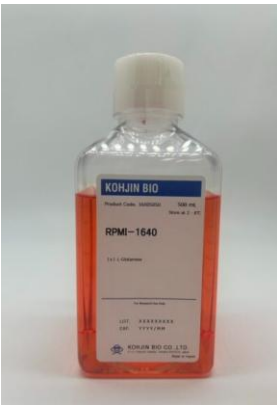
RPMI 1640

Description

Moore and colleagues developed RPMI 1640 in 1966 at the Roswell Park Memorial Institute to culture leukemia cell lines. It is one of the most valuable media for suspension culture of lymphoid cell lines, widely used in cellular immunity research.

Kohjin Bio offers two formulations of RPMI 1640, with or without L-glutamine, as listed in the table below.

Note: These products are for research use only and are not intended for therapeutic use in humans or animals.



Component	w/o L-Gln	w/ L-Gln
Product Code	16005005	16005050
Storage	2–8°C	2–8°C
Shelf Life	12 months, including the month of manufacture	9 months, including the month of manufacture
Inorganic Salts (mg/L)		
Calcium Nitrate · 4H ₂ O	100.0	100.0
Magnesium Sulfate (anhydrous)	48.84	48.84
Potassium Chloride	400.0	400.0
Sodium Chloride	6000.0	6000.0
Sodium Bicarbonate	2000.0	2000.0
Sodium Phosphate Dibasic (anhydrous)	800.0	800.0
Amino Acids (mg/L)		
L-Arginine	200.0	200.0
L-Asparagine · H ₂ O	56.82	56.82
L-Aspartic Acid	20.0	20.0
L-Cystine	49.84	49.84
L-Glutamic Acid	20.0	20.0
L-Glutamine	—	300.0
Glycine	10.0	10.0
L-Histidine	15.0	15.0
Hydroxy-L-Proline	20.0	20.0
L-Isoleucine	50.0	50.0
L-Leucine	50.0	50.0
L-Lysine HCl	40.0	40.0
L-Methionine	15.0	15.0
L-Phenylalanine	15.0	15.0
L-Proline	20.0	20.0
L-Serine	30.0	30.0
L-Threonine	20.0	20.0
L-Tryptophan	5.0	5.0
L-Tyrosine	20.0	20.0
L-Valine	20.0	20.0

Vitamins / Others (mg/L)		
4-Aminobenzoic Acid	1.0	1.0
D-Biotin	0.2	0.2
Choline Chloride	3.0	3.0
Cyanocobalamin	0.005	0.005
Folic Acid	1.0	1.0
D-Pantothenic Acid · ½Ca	0.25	0.25
myo-Inositol	35.0	35.0
Niacinamide	1.0	1.0
Pyridoxine HCl	1.0	1.0
Riboflavin	0.2	0.2
Thiamine HCl	1.0	1.0
Other Components (mg/L)		
D-Glucose	2000.0	2000.0
Reduced Glutathione	1.0	1.0
Phenol Red	5.0	5.0
Specifications		
Appearance	Orange–red transparent liquid	
Osmolality *1	290 ± 20 mOsm/kg H ₂ O	
pH *2	7.2 ± 0.3 *3	
Sterilization	Membrane filtration (0.2 µm)	
Sterility *4	Negative	
Mycoplasma *5	Negative	
Endotoxin *6	≤ 0.3 EU/mL	
Cell Proliferation *7	Promotes growth vs. control	

*1 Freezing point depression
*2 Glass electrode
*3 After 5% CO₂ / 37°C exposure
*4 TGC & SCD media, 14 days
*5 MycoTrim® TC
*6 Limulus assay
*7 Molt-4F cells, 5% FBS + L-Gln (300 mg/)