

## What media should I use?

Please use the medium described in the Cell Line Data Sheet / JCRB website cell line detail information.

### [Point of choice]

Essentially, each classical medium has sole standard formulation, but many modified products are sold by manufacturers, such as without L-glutamine, with HEPES, etc.

### L-glutamine

**For all mammalian cell culture, L-glutamine is one of essential amino acids. All media should contain L-glutamine finally.** However, some commercially available media do not contain it. This is because this component is not so stable in aqueous solution and not suitable for long term storage in liquid media. If this amino acid is not included in your media, you have to add.

Some media contain its stable substitute, L-alanyl L-glutamine (such as GlutaMAX™, glutagro™).

### HEPES

In general, HEPES is not the standard component of classical media such as MEM, DMEM, RPMI 1640 and Ham's F-12. HEPES is sometimes used for strongly buffering the pH, but not the essential component.

### Phenol red

Phenol red is pH indicator, and usually included in the media.

### Eagle's minimum essential medium (MEM)

#### – Earle's salts and Hanks' salts.:

For the cultivation in CO<sub>2</sub> incubator, please choose Earle's salts formulation.

#### – Non essential amino acids (NEAA), sodium pyruvate:

NEAA and sodium pyruvate are not the standard components in MEM.

### Dulbecco's modified Eagle's medium (DMEM)

#### – Low glucose and high glucose, sodium pyruvate:

The standard formulation is low glucose (1 g/L), and high glucose (4.5 g/L) is a modification. **JCRB used low glucose formulation unless otherwise described.** Sodium pyruvate is one of standard components of DMEM.

### Antibiotics

It is no problem to use antibiotic for cell culture, such as 100 units/mL penicillin + 100 ug/mL streptomycin. We don't recommend to add Fungizon (amphotericin B). In some cell types, it affects inhibitory to growth of cells.

### FBS (fetal bovine serum) and FCS (fetal calf serum)

FBS and FCS is the same material.

JCRB Cell Bank essentially uses the media with standard formulation.

The following table shows the example of liquid media products with standard formulation.

		Fujifilm Wako	GIBCO (ThermoFisher)	Sigma Aldrich (Merck, Millipore)	Corning
<b>MEM</b>	Eagle's minimum essential medium, EMEM, E-MEM	051-07615	11095-080	M4655	10-010-CV
<b>MEM with NEAA</b>	Eagle's minimum essential medium with non-essential amino acids	055-08975	10370-021 (add L-glutamine to 2 mM)	M0325, M5650 (add L-glutamine to 2 mM)	10-009-CV
<b>MEM alpha</b>	alpha MEM, $\alpha$ MEM alpha modification of MEM	137-17215	12571-063	M8042 (add L-glutamine to 2 mM)	10-022-CV
<b>DMEM (low glucose) [standard DMEM]</b>	Dulbecco's modified Eagle's medium, D-MEM, DME	041-29775	11885-084	D6046	10-014-CV
<b>DMEM (high glucose modification)</b>	DMEM with 4.5 g/L glucose	043-30085	11995-065	D6429	10-013-CV
<b>RPMI 1640</b>		189-02025	11875-093	R8758	10-040-CV
<b>F-12</b>	Ham's F-12, Ham's nutrient mixture F-12	087-08335	11765-054	N6658	10-080-CV
<b>F-12K</b>	Ham's F-12K Kaighn's modification of F-12	080-08565	21127-022		10-025-CV
<b>F-10</b>	Ham's F-10, Ham's nutrient mixture F-10		11550-043	N6908	10-070-CV
<b>DMEM/F-12</b>	DME/F-12, 1:1 mixture of DMEM and Ham's F-12	048-29785	11330-032 (contains HEPES)	D8062	10-090-CV
<b>L-15</b>	Leibovitz's L-15 medium	128-06075	11415-064	L1518	10-045-CV
<b>BME</b>	basal medium Eagle, Eagle's basal medium		21010-046 (add L-glutamine to 2 mM)	B1522 (add L-glutamine to 2 mM)	
<b>McCoy's 5A</b>			16600-082	M9309	10-050-CV
<b>Medium 199</b>			11150-059	M4530	10-060-CV
<b>William's medium E</b>			12551-032 (add L-glutamine to 2 mM), 32551-020 (contains GLUTAMAX)	W4128 (add L-glutamine to 2 mM)	
<b>100X L-glutamine solution (200 mM) for MEM</b>	supplement to media	073-05391	25030-081	G7513	25-005-CI
<b>100X non-essential amino acids solution (10 mM) for MEM</b>	supplement to media	139-15651	11140-050	M7145	25-025-CI