

# Kuni-Grow+<sup>®</sup> Series

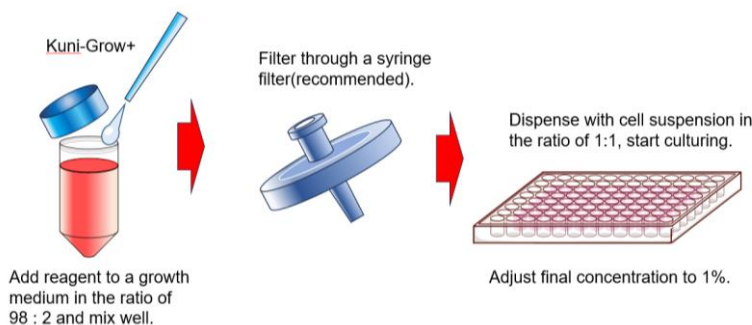
**Kuni-Grow+<sup>®</sup>**, developed by Kunimine Industries co., Ltd. is reagent for cell culture that composed mainly by inorganic layered compounds (clay). Simply by adding it to your culture medium, it adsorbs growth factors (serum proteins, etc.) in the medium and accelerates the formation of spheroids by acting on cells. Research to date has confirmed spheroid formation in a variety of cancer cell lines.

We offer four types of reagents with different mineral species, and we have prepared a trial kit so that you can first select the most suitable reagent for your target cell line.

## Features : Easy form spheroids!

- No special culture medium or culture containers are required.
- Store at room temperature.
- Effectiveness has been confirmed various cancer cell lines.
- Spheroid formation is possible in a short time (a several days to a week).
- Observation of time lapse is possible because spheroid formations are distributed throughout the entire culture and do not move much.

## How to Use



1. Add **Kuni-Grow+** to your culture medium at a ratio of 98 (medium): 2 (reagent) and mix well.
2. Filter through a syringe filter (5μm pore size) to remove aggregates.  
Note: It is not mandatory procedure but is recommended.
3. Add an equal volume of cell suspension to the culture plate after dispensing, then, start the culture.

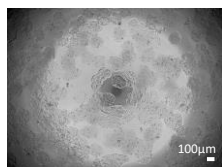
Note: Exchanging culture media is the same method as normal planar culture.



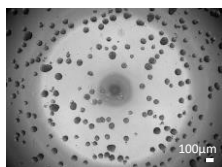
## Culture Examples

### ■ HT29 spheroid (After 5 days)

- Culture Medium: RPMI1640, Serum10%FCS
- Plate: Plate for adherent cells



Control

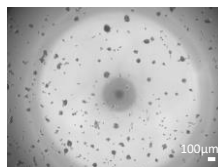


Add Kuni-Grow+\_Y

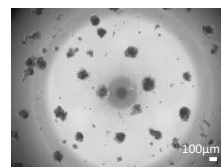
By adding Kuni-Grow+, spheroid formations are distributed throughout the entire culture.

### ■ Comparison with commercial medium culture in U-87MG cells (After 5 days)

- Culture Medium (L) 3D culture medium, (R) E-MEM, Serum10%FCS
- Plate : Plate for adherent cells



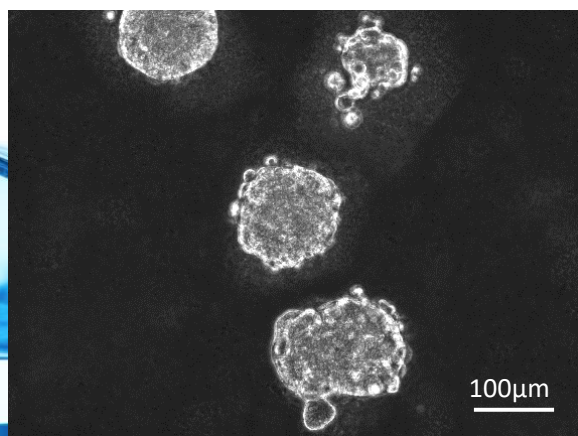
Use commercial culture medium



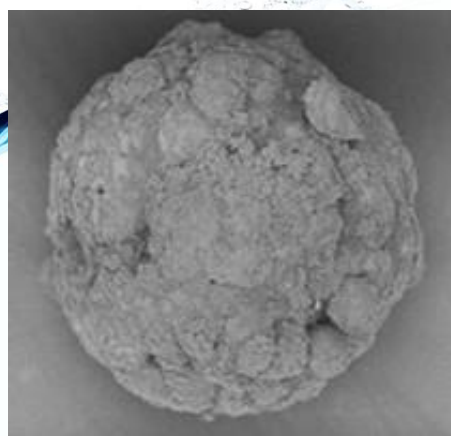
Add Kuni-Grow+\_B

Both spheroids are distributed throughout the cells, However, spheroids are larger in case of using Kuni-Grow+.

## ■ Magnified images of spheroid of HT29 cell



Microscopic image



Electron microscope image

## Cell lines with proven efficacy (As of March 2024)

Cell type	Cell line	Origin
Glioblastoma	LN-229	Human glioblastoma
	KNS-81	Human glioblastoma
	LN-299	Human glioblastoma
	U-251MG	Human glioblastoma
	U-87MG	Human glioblastoma
Kidney cancer	786-O	Human kidney carcinoma
	ACHN	Human renal cell carcinoma
	Caki-1	Human kidney carcinoma
	Caki-2	Human kidney carcinoma
Colorectal cancer	DLD1	Adenocarcinoma of the Human Colon
	HCT 116	Adenocarcinoma of the Human Colon
	HT29	Adenocarcinoma of the Human Colon
	SW620	Adenocarcinoma of the Human Colon

Cell type	Cell line	Origin
Pancreatic cancer	AsPC-1	Human metastatic pancreatic adenocarcinoma
	KLM-1	Human pancreatic cancer
	MIA PaCa-2	Human pancreatic cancer
	PANC-1	Human pancreatic adenocarcinoma
Ovarian cancer	A2780	Human ovarian cancer
	Caov-3	Human ovarian cancer
	SK-OV-3	Human ovarian adenocarcinoma
Bladder cancer	5637	Human bladder cancer
	UM-UC-3	Human bladder cancer
Lung cancer	A549	Human lung cancer
Neuroblastoma	SH-SY5Y	Human neuroblastoma

Code	Product Name	Volume	Price(JPY)
192000	Kuni-Grow+_ Trial kit	1mLx 4	10,000
192010	Kuni-Grow+_ B (Blue label)	5mL	30,000
192020	Kuni-Grow+_ Y (Yellow label)	5mL	30,000
192030	Kuni-Grow+_ G (Green label)	5mL	30,000
192040	Kuni-Grow+_ R (Red label)	5mL	30,000

- ✓ Each grade (B, Y, G, R) has different mineral species. Please use according to the compatibility with the culture cell type.
- ✓ Trial kits (4 types in total, 1mL each) are available, so please select the optimal reagent for your target cell line.



👉 Kuni-Grow+ is available from FUJIFILM Wako Pure Chemical Corporation.