



EZ-Flask and G-Rex Harvest Results and Testimonials

EZ-Flask Testimonials

GSK, Virginie Hermans

“We have already used EZ Flask to amplify and to produce a small amount of mabs (20-30 mg)

We are satisfied with this product and we'll continue to use it.”

CID CSIC Spain, Nuria Pascual

“We have tested the EZ-Flask and we obtained a good productivity by using your instructions.

We don't have a report yet, but we can say that the final productivity from the tested hybridomas was about 0.1 mg/ml, about two fold the usual productivity in our flask system.”

Davids Biotechnologie GmbH

“We've already used the EZ-Flask. Looks like the membrane works very well. The cells are longer viable than in other flasks. The production rate of the hybridoma increased up to 30% compared to our standard flask.”

FIRALIS, Wilhelm CHRISTALLER

“So, yes we used the flasks, for multiple productions. For one hybridoma clone, we have been able to harvest 25 mg of antibodies. The flask has been reused with the same clone, and the harvest yield has been similar, which may indicate that EZ flask could be reusable, at least for some clones.

For other clones, harvest yield has been lower, around 3-4 mg, it could require optimization.”

DIA PRO - Cristina Scozzesi

"I am the Strategic Raw Materials Director. I tested the EZ flask with my colleagues . As you requested I've attached the results of some growth compared to another in vitro culture device (BioCellLine). As you can deduce from the table we feel quite satisfied with your product EZ Flask. Especially comparing your product with a similar in vitro static culture devices.

We will use this system for R&D. For larger scale productions of IgG we will switch to [Hollow Fiber](#) ASAP."

Serial N°	Device	Hybridoma cell line	N° cells/cm2	Start ml Medium	Medium	ml addition medium	useful days final harvest	Volume collected
n° 000015106	EZ-FLASK	27A	125,000	250 ml	DMEM 10% FCS	250 ml added every 7 days	28 days	1000 ml
n° 000015106	EZ-FLASK	27A	125,000	250 m	DMEM 10% FCS	250 ml added every 7 days	28 days	1000 ml
n° 000015106	EZ-FLASK	27A	125,000	500 ml	DMEM 10% FCS	500 ml added every 14 days	28 days	1000 ml
n° 000015106	EZ-FLASK	2B3	125,000	500 ml	DMEM 10% FCS	500 ml added every 14 days	28 days	1000 ml
n° 000015106	EZ-FLASK	AyN	125,000	500 ml	DMEM 10% FCS	500 ml added every 14 days	28 days	1000 ml
n° 000015106	EZ-FLASK	AyN	125,000	500 ml	DMEM 10% FCS	500 ml added every 14 days	28 days	1000 ml
Supplier	Device	Hybridoma cell line	Start n° cell/15 ml	Start ml Medium	Medium	ml addition medium	durata coltura	Volume ottenuto
CellLine	BIOCELL 1000	27A	25 x 10 ⁶	15	DMEM 15% FCS	External compartment 1000 ml every 7 days	75 days	240 ml
CellLine	BIOCELL 1000	AyN	25 x 10 ⁶	15	DMEM 15% FCS	External compartment 1000 ml every 7 days	75 days	200 ml
	REV # 01.07.21							
	C. Scozzesi							

DIA PRO - Cristina Scozzesi

“We carried out a continuous study with EZ Flask using 2 different cell lines and changing the medium once a month. I will buy other EZ-Flasks to implement our production, now that I have developed a suitable growth protocol for our needs.”

Type of culture	Cell Line name	Number of initial cells	Start medium volume	MEDIUM	Time of culture	IgG Purified obtained
1 EZ-FLASK n. 000015106	α S2B3	25 x 10 ⁶	500 ml	DMEM 10% FCS completo	2 + 2 weeks	33 mg
		25 x 10 ⁶	500 ml		2 + 2 weeks	120 mg
		25 x 10 ⁶	750 ml		3 weeks	106 mg
		25 x 10 ⁶	1000 ml		4 weeks e	135 mg
		25 x 10 ⁶	1000 ml		4 weeks e	100 mg
		25 x 10 ⁶	1000 ml		4 weeks	47 mg **
		25 x 10 ⁶	1000 ml		4 weeks e	90 mg
		50 x 10 ⁶	1000 ml		4 weeks e	88,5 mg
		25 x 10 ⁶	1000 ml		4 weeks	64 mg
		25 x 10 ⁶	1000 ml		4 weeks	83,5 mg
**						
Poor yield level						
Maybe some problem during purification step						
			<u>n° cellule totali:</u>	10 x 10 ⁶ cellule ottenute dopo 4 settimane		
Type of culture	Cell line Name	Number of initial cells	Start medium volume	MEDIUM	Time of culture	IgG Purified obtained
1 EZ-FLASK	α RBD 4.30.3.3	50 x 10 ⁶	500 ml	DMEM 10% FCS	2 + 2 weeks	50 mg
		50 x 10 ⁶	1000 ml	classic	4 weeks	90 mg
		50 x 10 ⁶	1000 ml		4 weeks	47 mg
		50 x 10 ⁶	1000 ml		4 weeks	33 mg
			<u>n° cellule totali:</u>	10 x 10 ⁹ cellule ottenute dopo 4 settimane		

INGENASA - Isabel Garcia

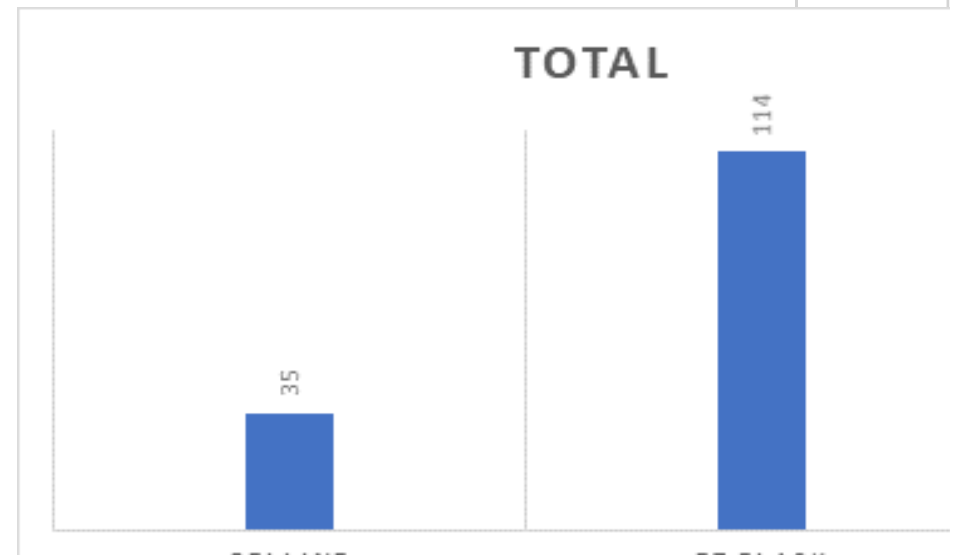
“Attached are the results obtained, comparing them with the growth in CELLINE.

We have grown a hybridoma to obtain mAb. And it effectively significantly increases yield. Growing it in the same conditions of culture media and supplements.

With this hybridoma there are no differences in the production obtained with the two different growth protocols you gave us; one for 15 days, and the other at 30 days.”

mAb	Growth platform	Cells seeded	Culture days	mg	mg/L medium
mAbX1	CELLINE	30.106	30	35	0,015
mAbX2	EZ FLASK	70.106	15	117	117
mAbX3	EZ FLASK	70.106	30	111	111

Etiquetas de fila	Promedio de mg
CELLINE	35
EZ FLASK	114



TWINCORE - Bibiana Costa

“As promised, please find in the annex the data from the G-Rex 6 Well Plates we received. (note: One well of a G-Rex 6 well plate is equivalent to a x20 scaled-down version of an EZ-Flask). I didn't have the chance of repeating the ELISA and since our end goal is to have a good neutralizing antibody and not find their concentration I don't think I will do it before submitting my Ph.D. thesis.

We are still very happy with the EZ-Flasks, and we produced many new antibodies, but currently my colleagues and I are just using everything that we produced since it is a lot. We will for sure contact you for a new order in the future!”

Neutralization efficacy

- $7 \cdot 10^6$ T175flask- 1:10
- $1,25 \cdot 10^6/1(6wp)$ G-REX- 1:500
- $10 \cdot 10^6/1(6wp)$ G-REX- 1:500
- $30 \cdot 10^6/1(6wp)$ G-REX- 1:1000
- $50 \cdot 10^6/1(6wp)$ G-REX- 1:1000

SERAMUN - Robert Gierke

“We will definitely need more G-Rex plates this year.”

Clone ID	Start			End (after 9 days)			IgG yield Protein G [mg]	Percentage increase in total cell count
	total cell count	viable cell density	viable cell density [%]	total cell count	viable cell density	viable cell density [%]		
Clone 1	4,50E+06	4,50E+06	100,0	1,07E+08	1,40E+07	13,1	2,1	2383
Clone 2	2,75E+06	2,75E+06	100,0	1,26E+08	3,05E+07	24,2	0,4	4590
Clone 3	2,75E+06	2,75E+06	100,0	1,35E+08	2,64E+07	19,5	2,4	4920
Clone 4	1,00E+06	9,00E+05	90,0	9,41E+07	2,81E+07	29,8	1,6	9405
Clone 5	3,00E+06	2,75E+06	91,7	9,98E+07	1,57E+07	15,7	2,1	3328
Clone 6	1,30E+06	1,10E+06	84,6	8,33E+07	6,60E+06	7,9	2,6	6410
Clone 7	5,25E+06	4,75E+06	90,5	1,13E+08	2,31E+07	20,4	1,6	2153
Clone 8	8,00E+06	7,25E+06	90,6	8,75E+07	2,97E+07	34,0	1,9	1093
Clone 9	3,00E+06	2,50E+06	83,3	9,82E+07	3,88E+07	39,5	1,3	3273
Clone 10	7,25E+06	7,00E+06	96,6	1,77E+08	7,01E+07	39,7	1,0	2435
Clone 11	6,00E+06	6,00E+06	100,0	9,16E+07	2,64E+07	28,8	0,8	1526
Clone 12	3,50E+06	3,25E+06	92,9	1,27E+08	5,78E+06	4,5	2,2	3630
Clone 13	2,10E+06	1,80E+06	85,7	1,08E+08	2,39E+07	22,1	1,5	5146
Clone 14	2,75E+06	2,50E+06	90,9	1,05E+08	3,55E+06	3,4	1,1	3810
Clone 15	3,75E+06	3,75E+06	100,0	1,06E+08	2,89E+07	27,3	3,7	2816