Sergiy Kyrylenko
kyrylenk@gmail.com
098 024 6482
---- supported by the Erasmus+ JM program ----
---- supported by the Horizon 2020 program ----

КУЛЬТУРА КЛІТИН ЯК ІНСТРУМЕНТ ДЛЯ НАУКОВИХ ДОСЛІДЖЕНЬ ТА ПРАКТИЧНОГО ВИКОРИСТАННЯ

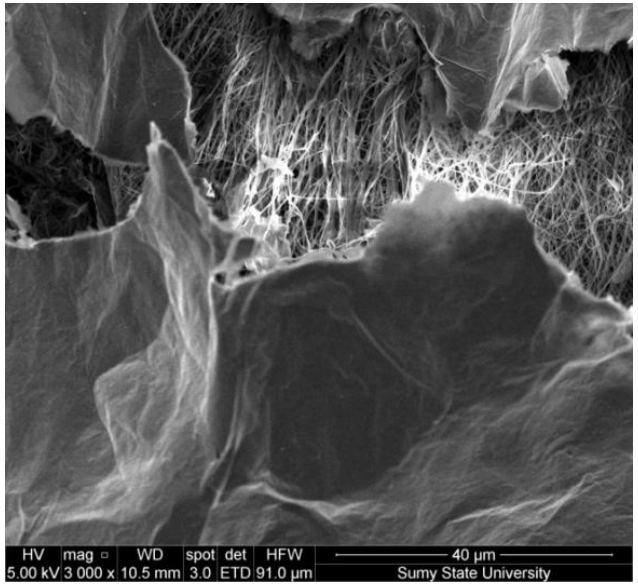
https://www.shimadzu.eu/cell-culture-analysis

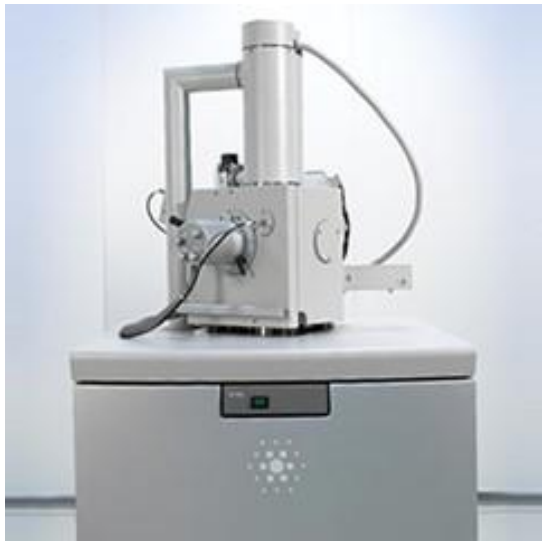
---- supported by the Erasmus+ JM program ----
---- supported by the Horizon 2020 program ----

Biomedical Research Center

Medical Institute of Sumy State University

- Cell culture laboratory
- Microbiological laboratory
- ELISA laboratory
- Chemical and toxicological laboratory





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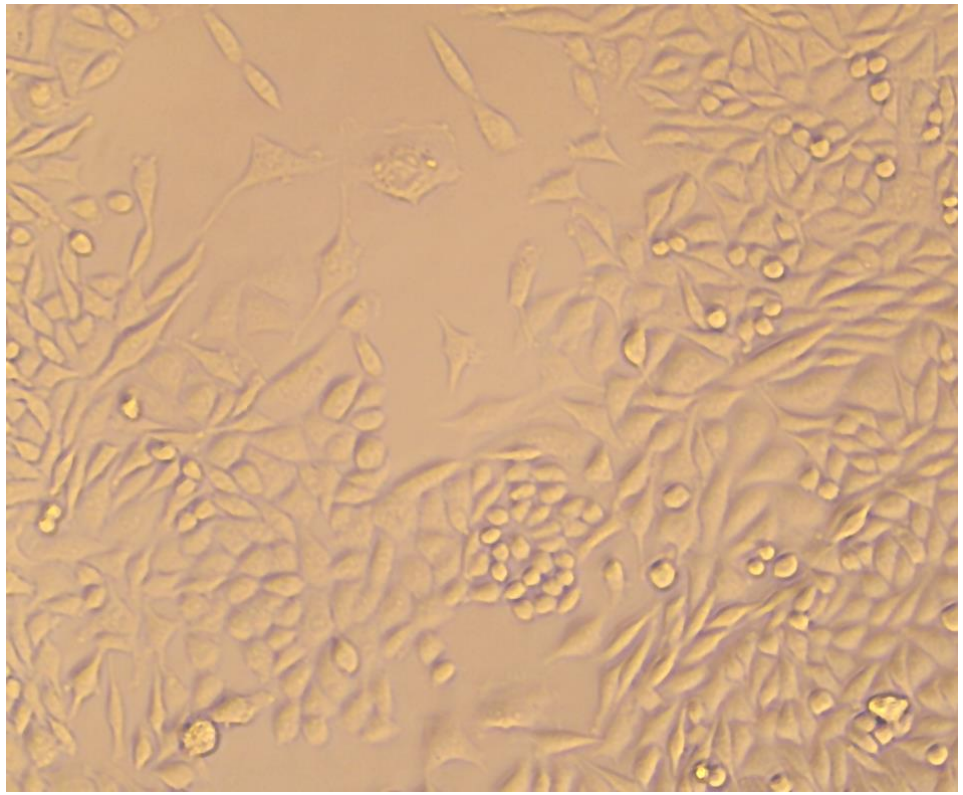

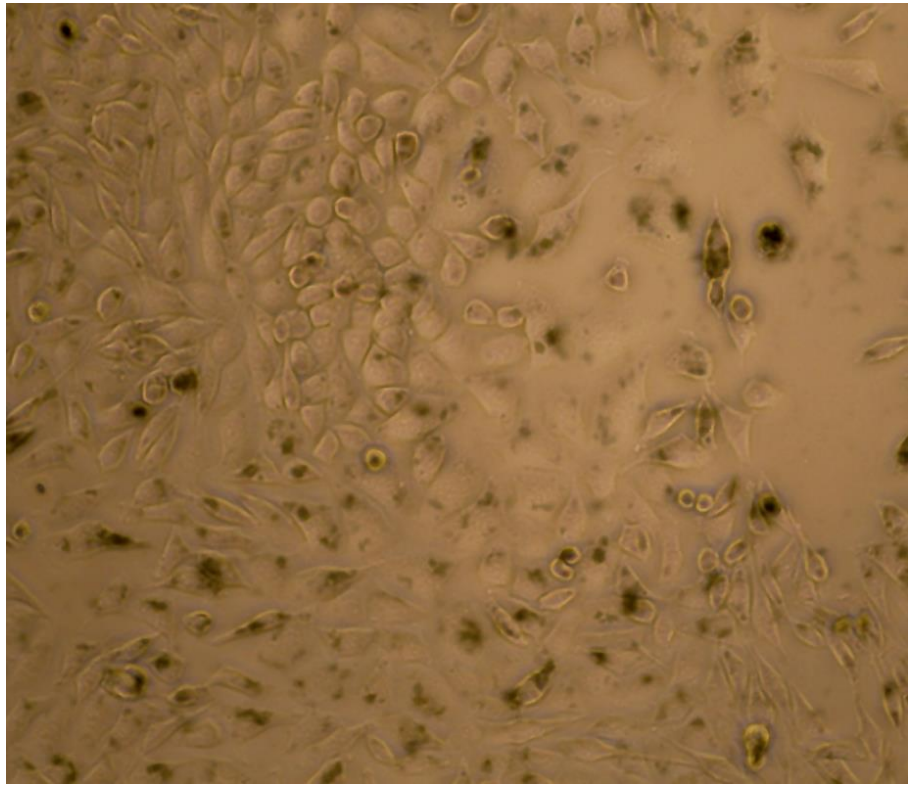

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MATERIALS RESEARCH CENTRE
MRC
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VERBA & HEALTH | МЕДИЧНИЙ ЦЕНТР

CSD
МЕДИЧНА ЛАБОРАТОРІЯ

Drexel

ZMB
Zentrum für Medizinische Biotechnologie
Center of Medical Biotechnology

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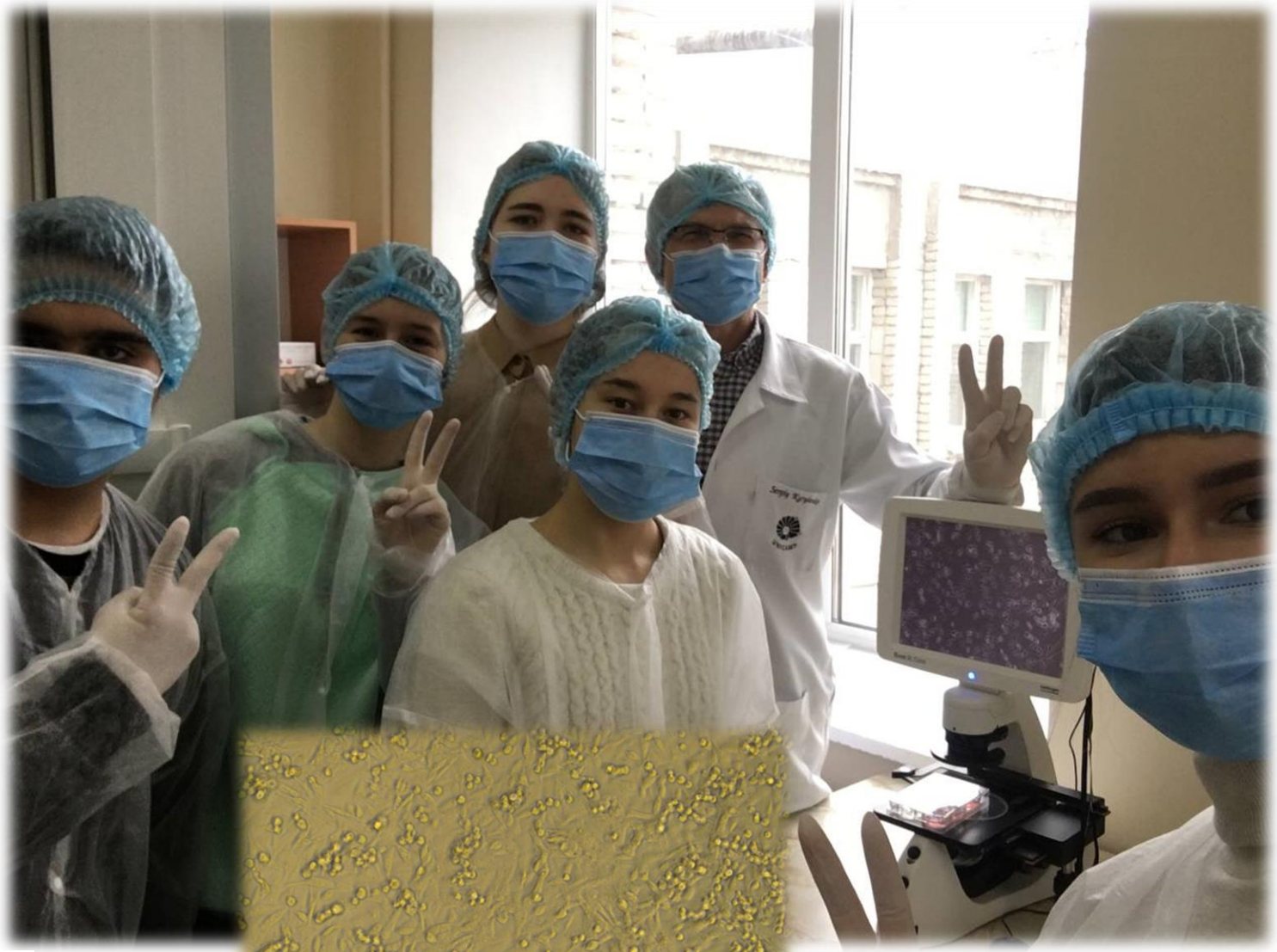

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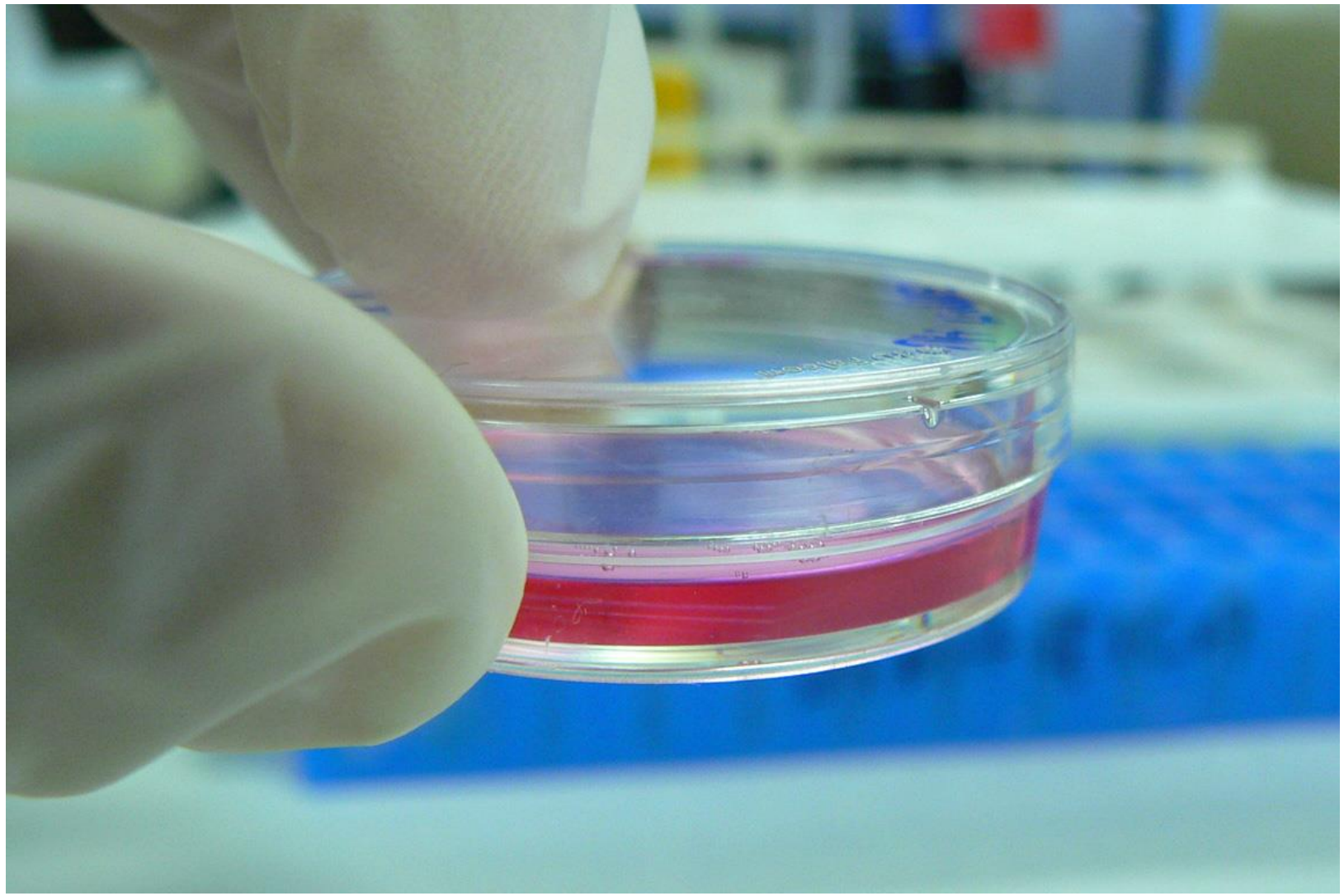
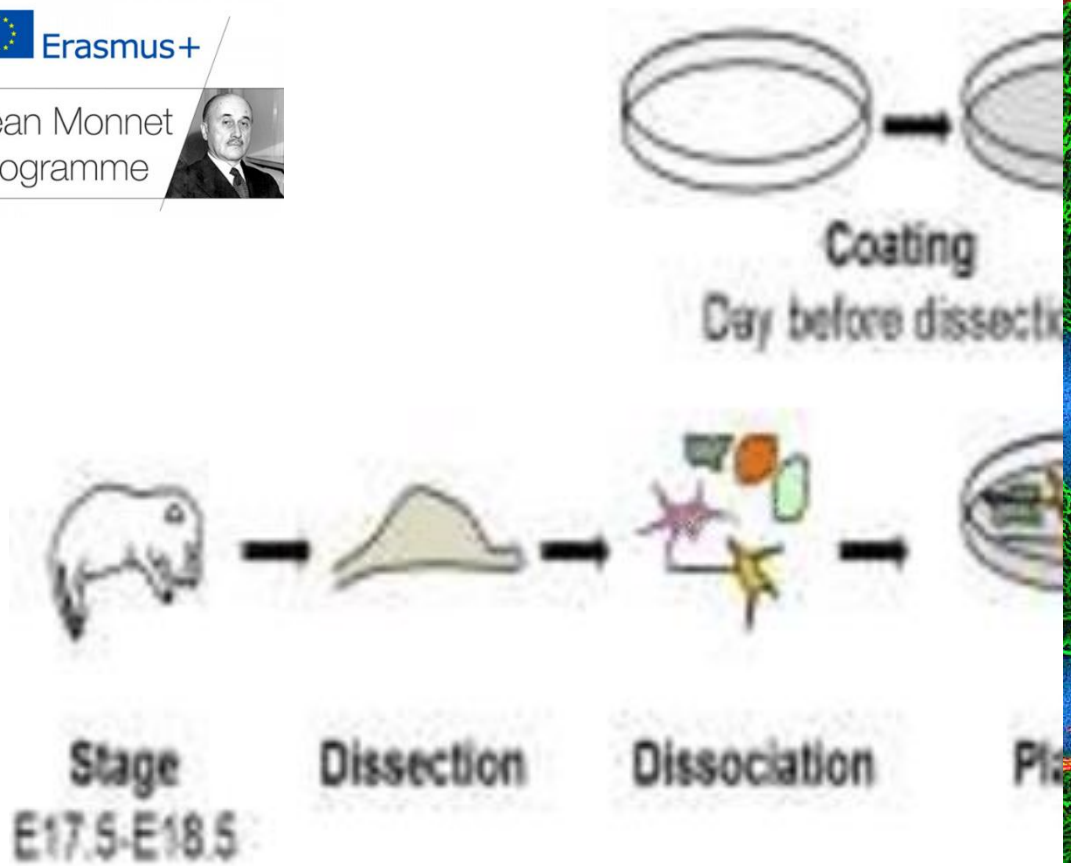


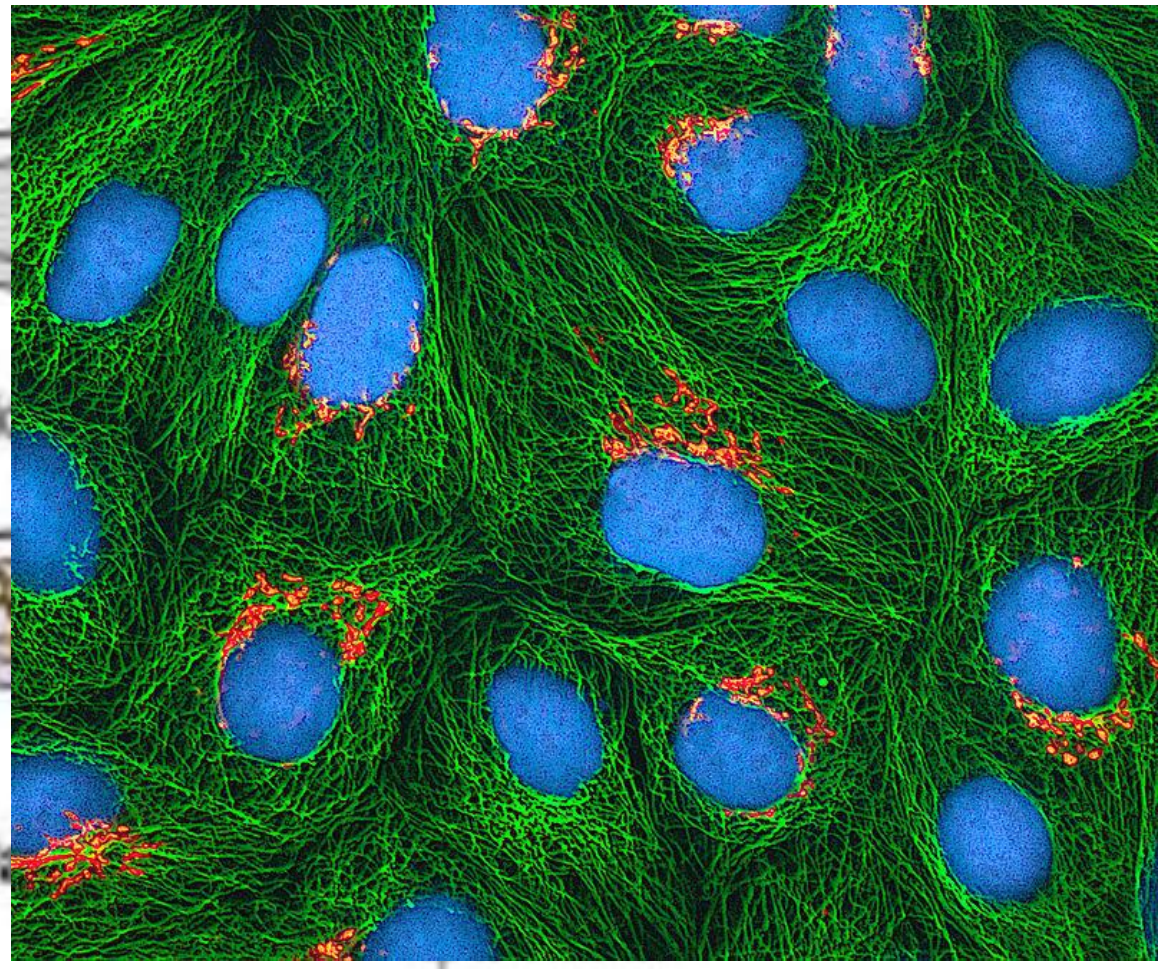
https://en.wikipedia.org/wiki/Cell_culture

Primary cell cultures



https://www.researchgate.net/profile/Pallav-Kaushik-Deshpande/publication/312117168/figure/fig1/AS:447555881443328@1483717045803/Schematic-representation-for-primary-neuronal-cell-culture-Source-Alexandra-Nothnagel.png

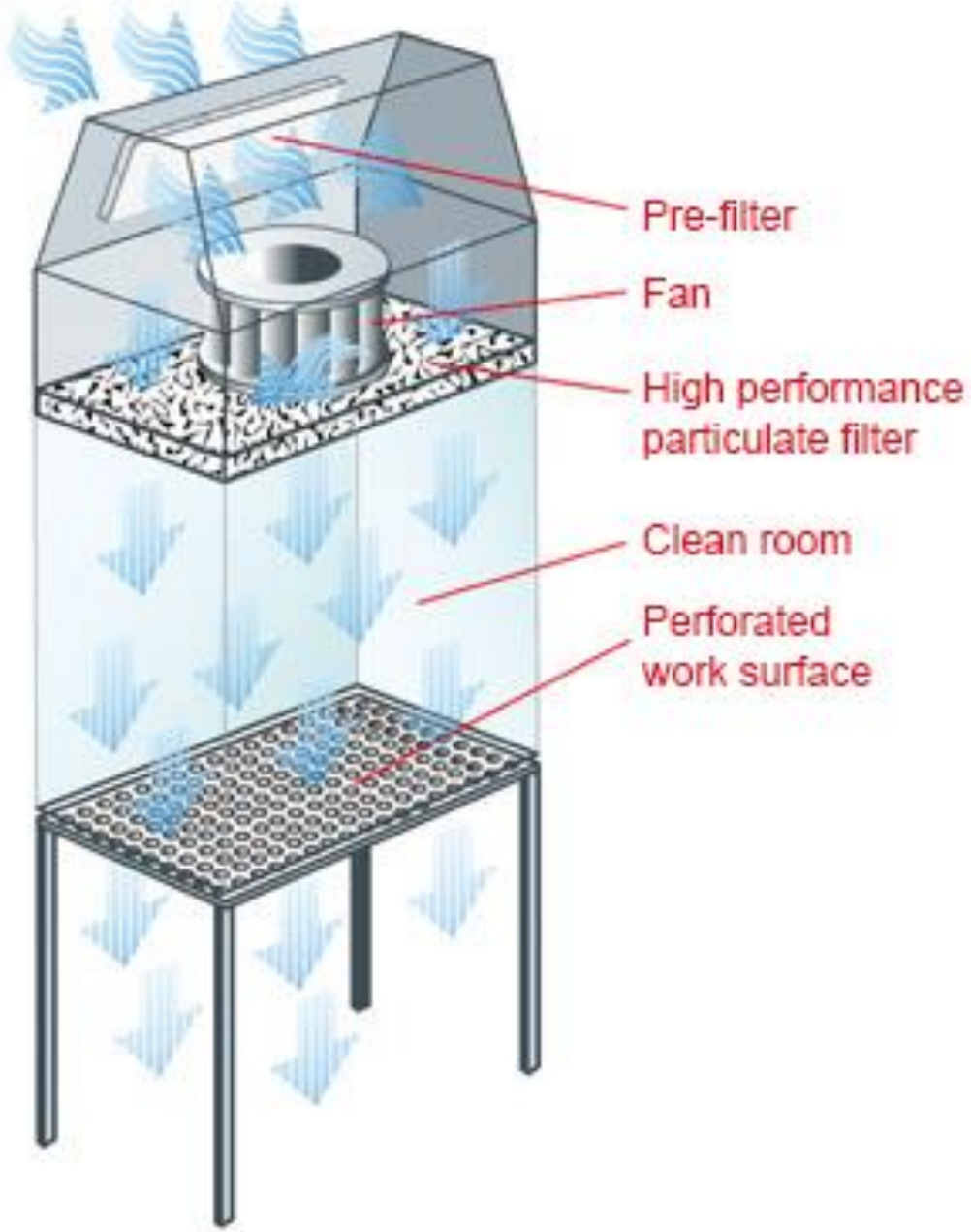
Established cell lines



HeLa - cervical cancer cells

https://en.wikipedia.org/wiki/HeLa#/media/File:HeLa-I.jpg

https://image.made-in-china.com/2f0j00EUVYhGBJqbup/Desktop-Biosafety-Cabinet-Class-II-Type-B2-Laboratory-Equipment-Biological-Safety-Cabinet.jpg



https://www.spetec.de/images/laminar-flow-anwendungsbeispiel-01_en.jpg


Smart Biotherm
S-Bt
biosan
Compact CO2 Incubator


S-Bt
biosan


eppendorf
Centrifuge 5702 R


prog
temp
fast temp
open

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Salvum
Energy Saving

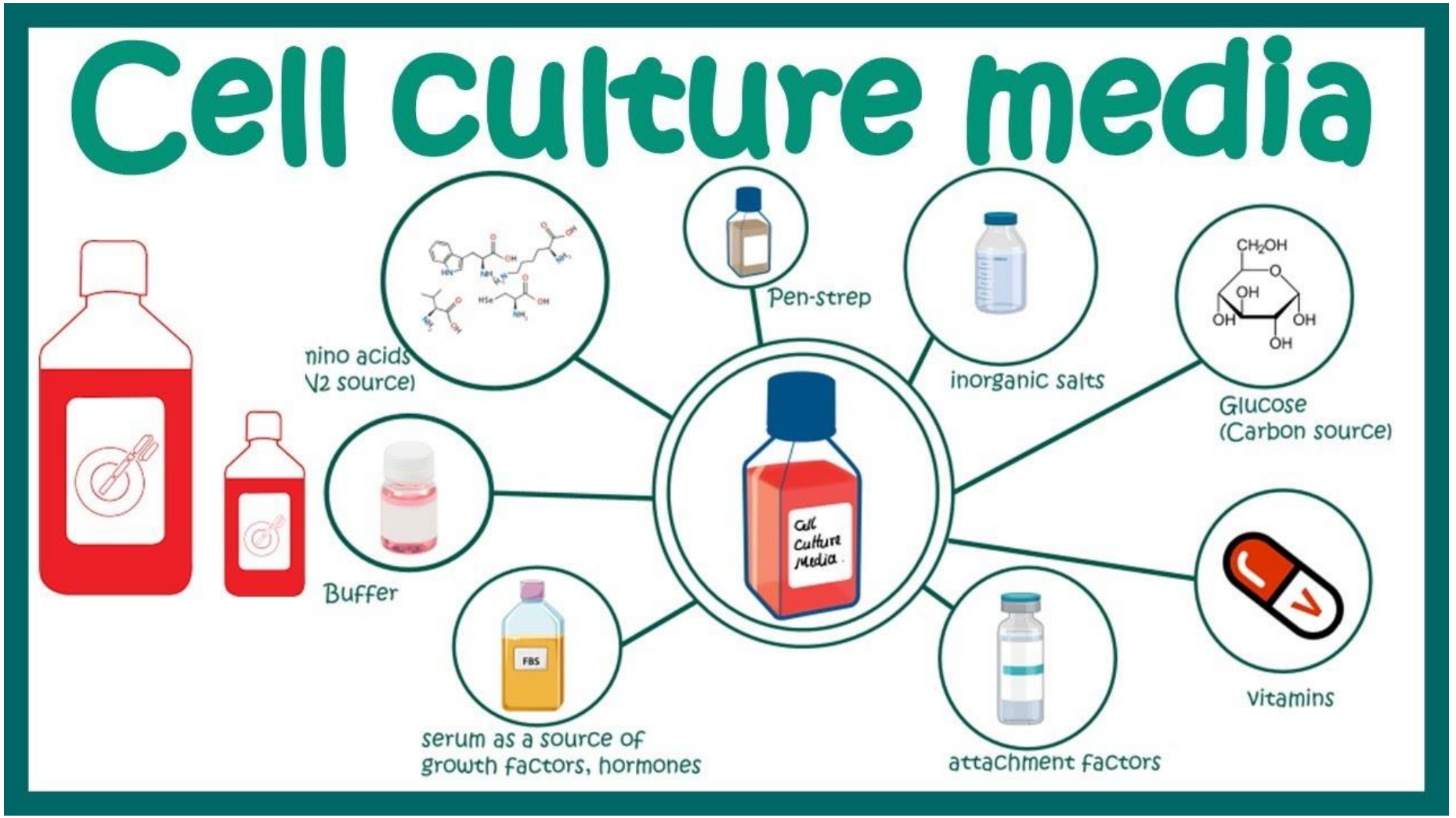

MIKRO 220R

https://www.corning.com/content/dam/corning/media/worldwide/cls/images/LiquidHandling/cls-liquidhandling-equipment-tile-sq.jpg

https://www.fishersci.se/shop/products/nunclon-sphera-dishes/15257905

https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQ2WV-pZW94j66RYTrwsFZ-v860uuSUy4tf6w&usqp=CAU

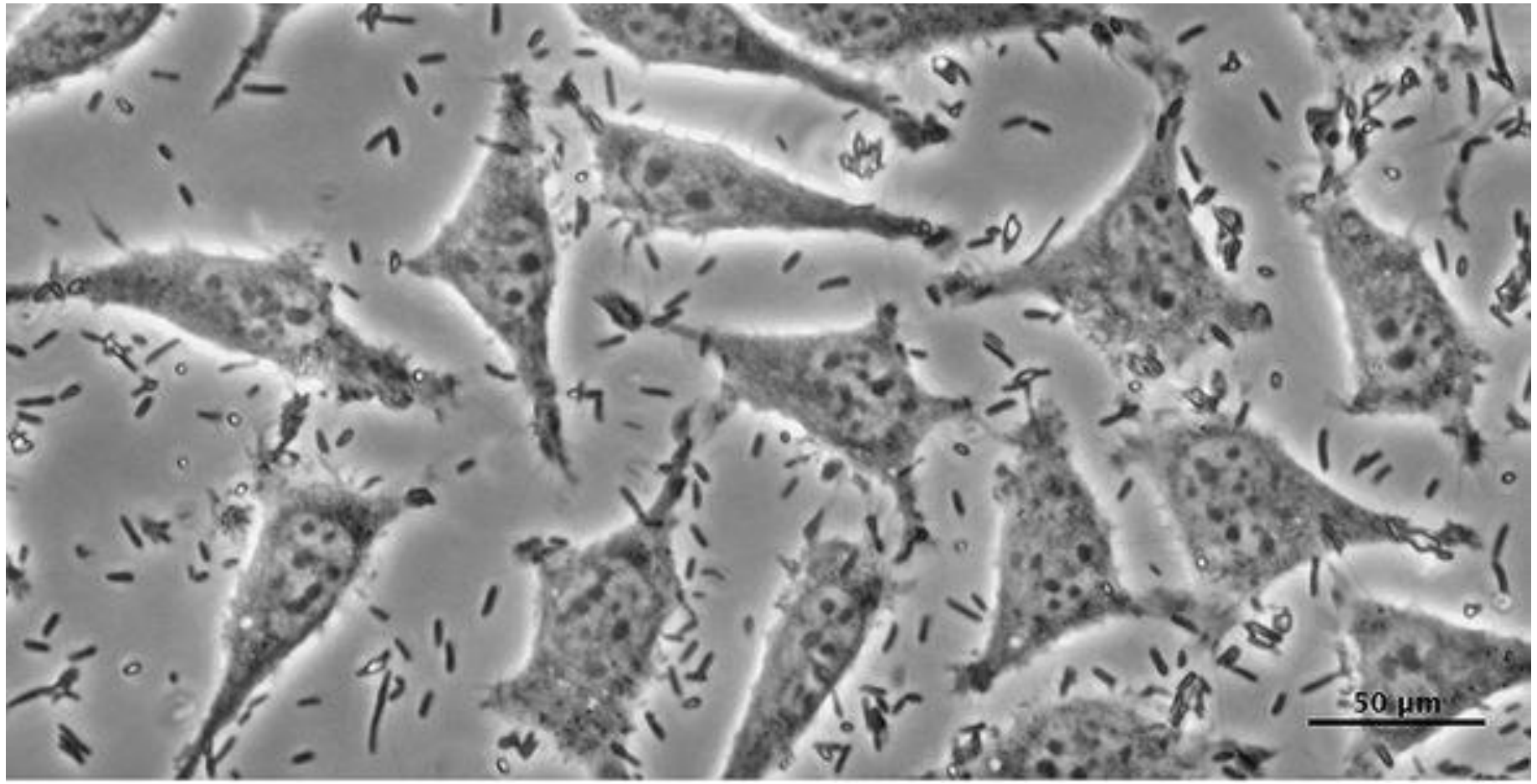
https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcTzaQeHur3Nzp_l1k4BBbYbt1cLPV0gGq1rdQ&usqp=CAU



https://www.youtube.com/watch?v=UV7T9JsxdXA&ab_channel=AnimatedbiologyWitharpan

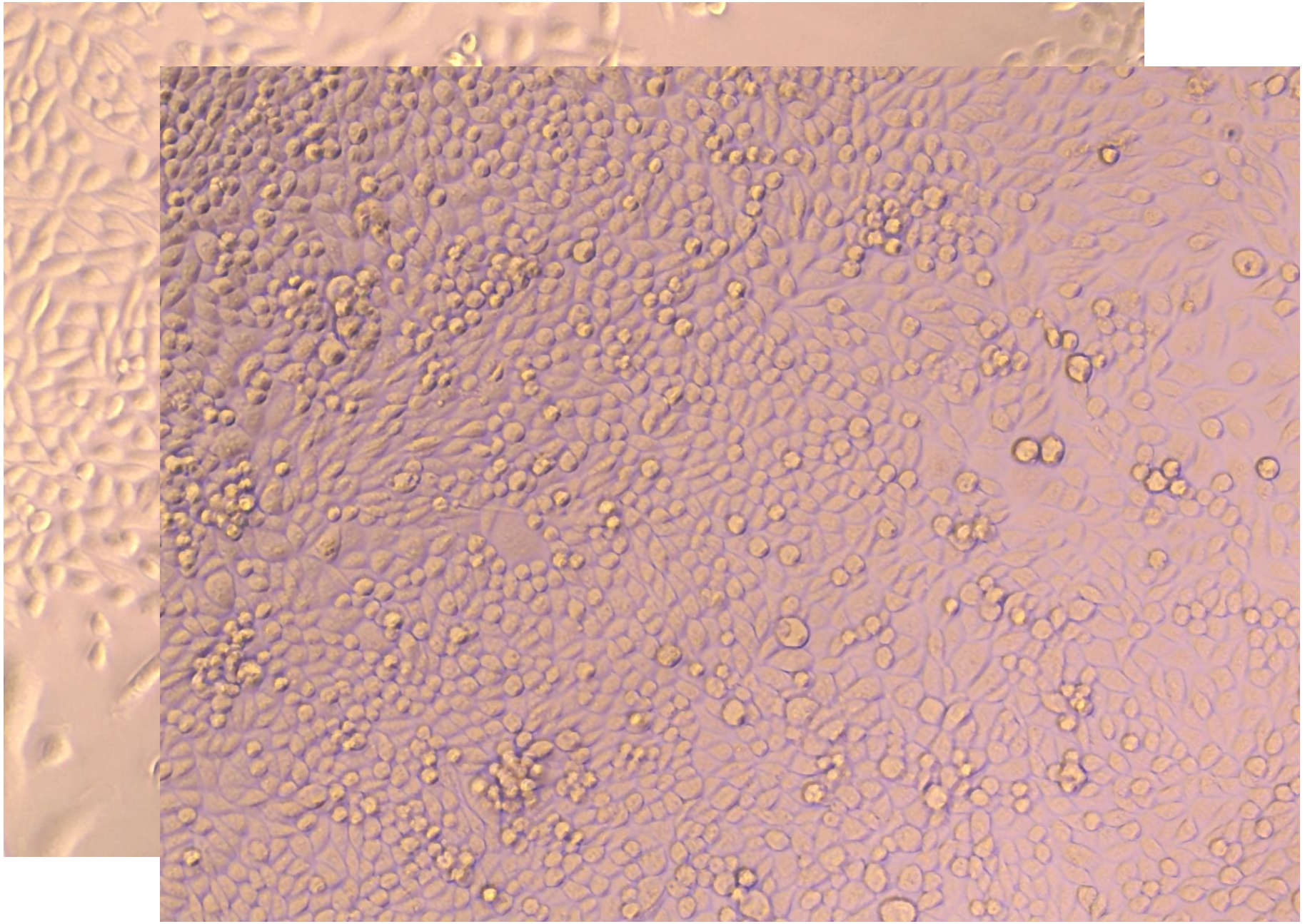
https://assets.thermofisher.com/TFS-Assets/LSG/product-images/11995073_650x600.jpg-650.jpg

https://assets.fishersci.com/TFS-Assets/CCG/product-images/10270106_650X600.jpg-650.jpg

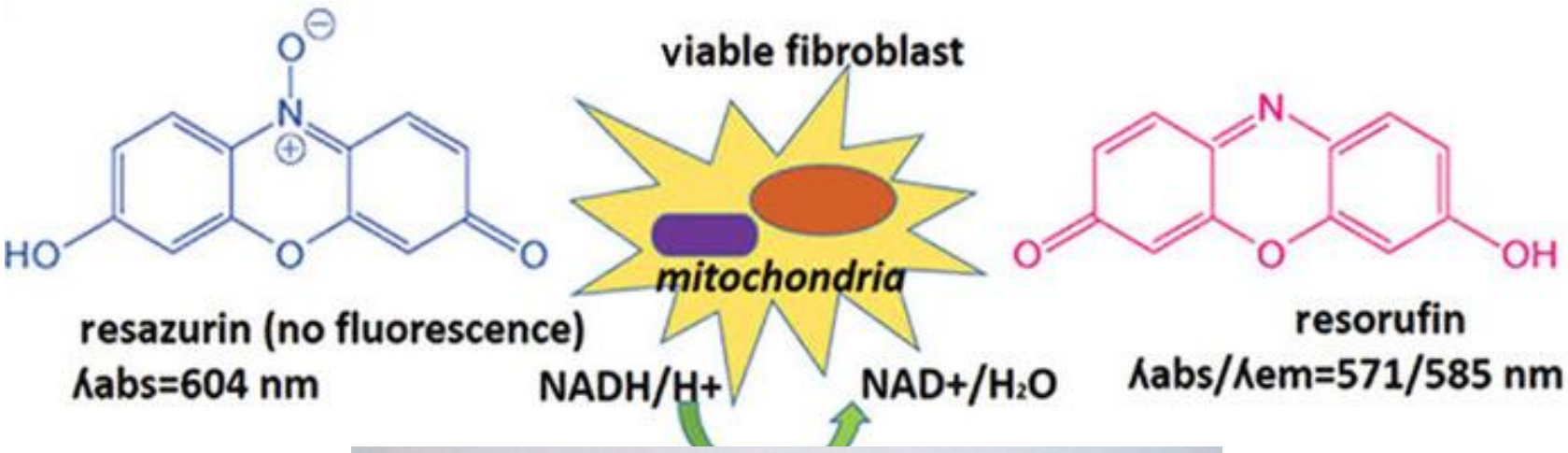


https://handling-solutions.eppendorf.com/fileadmin/_processed_/0/f/csm_Bacterial_contamination-450_fda4eaf0a0.jpg

https://www.science.org/doi/abs/10.1126/scitranslmed.3005804



Resazurin reduction assay



https://doi.org/10.1002/cptx.1

Застосування

- Доклінічні дослідження нових лікарських препаратів
- Накопичення вірусів
- Дослідження біохімії живих систем
- Виробництво рекомбінантних білків
- Виробництво антитіл
- Дослідження покриттів імплантатів на біосумісність
- Токсикологічні дослідження

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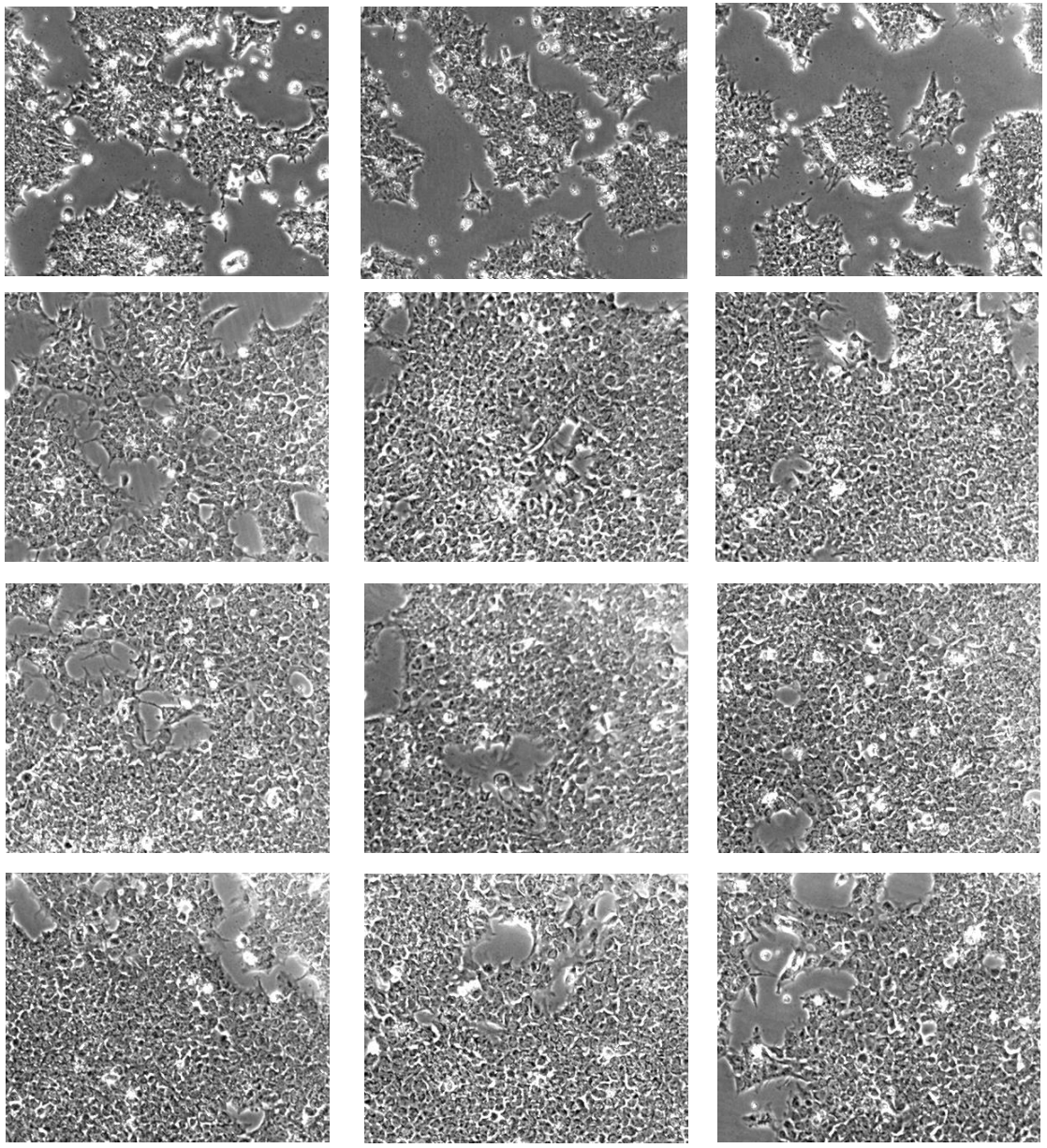
L12cp36-6 on Matrigel



No FGF2

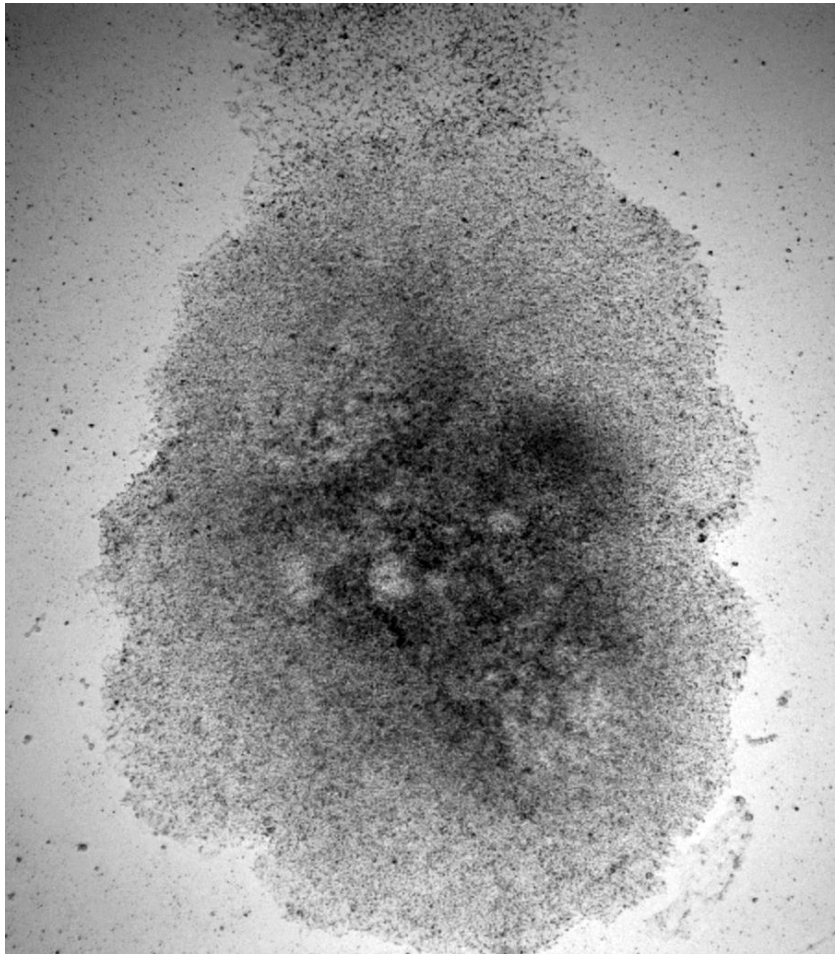
FGF2-133 cleaved

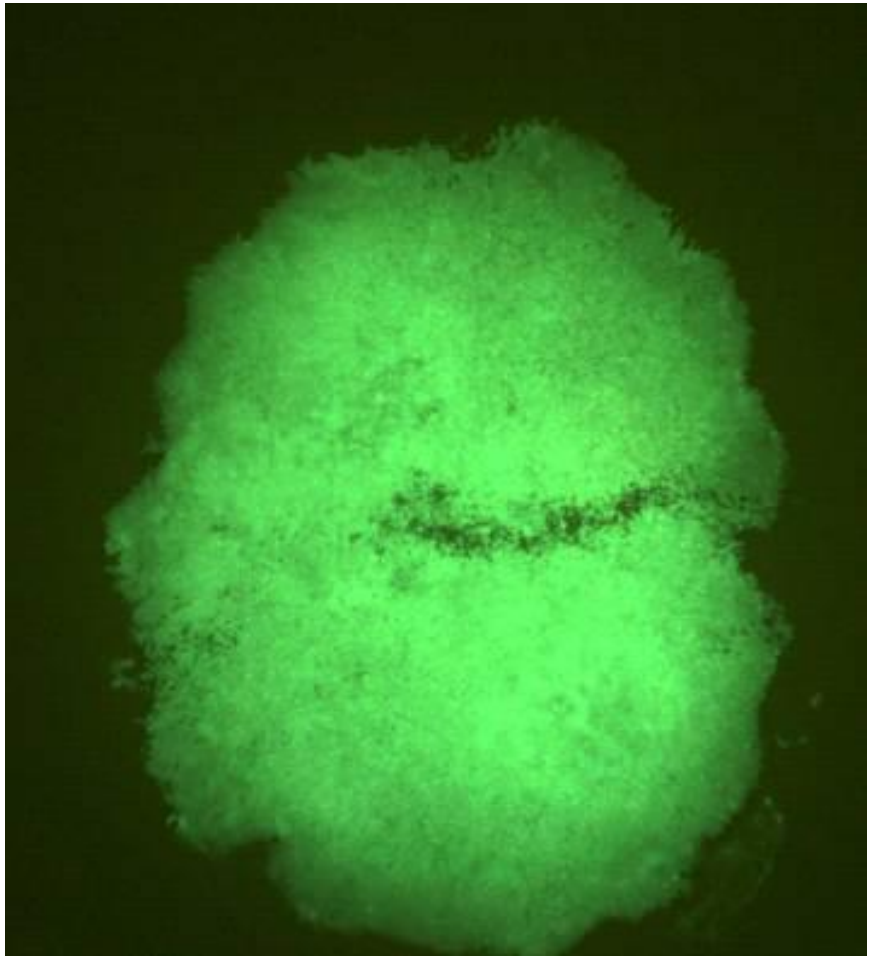
FGF2-133 fused

FGF2 standard

Cells plated at density of 20 000/cm2, grown for 3 days
3 representative pictures shown for each treatment

Stable hESC clone overexpressing GFP





Line CCTL14cp25/6 on Matrigel

Nucleofection – pEGFP-N1, program A-023, solution HSC1

Selection for 15 days with G418 120 ug/ml

S. Kyrylenko, unpublished

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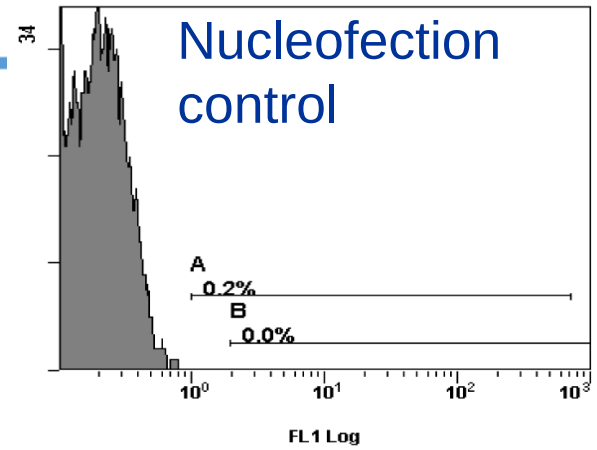
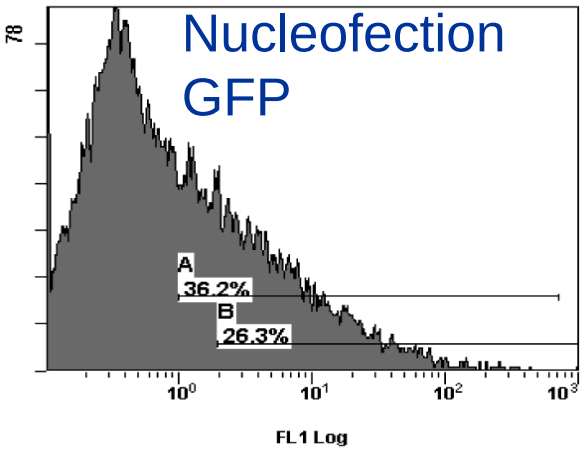
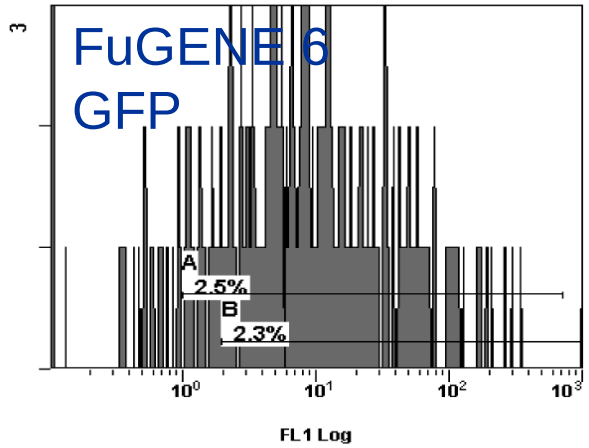
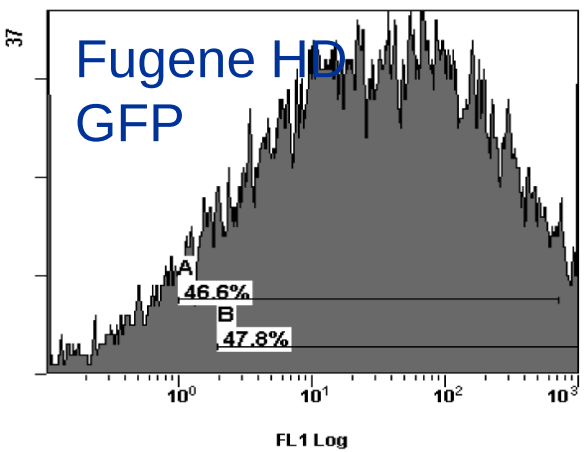
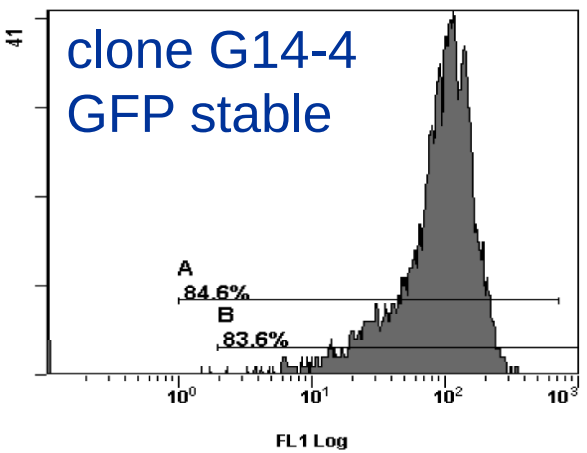
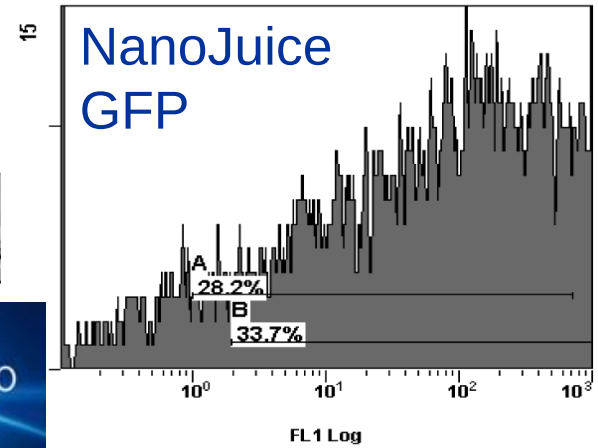


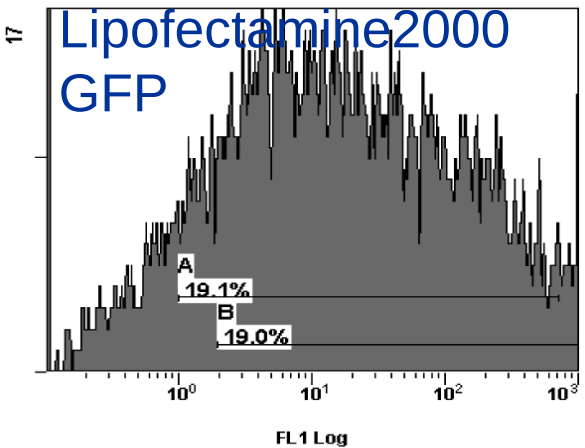








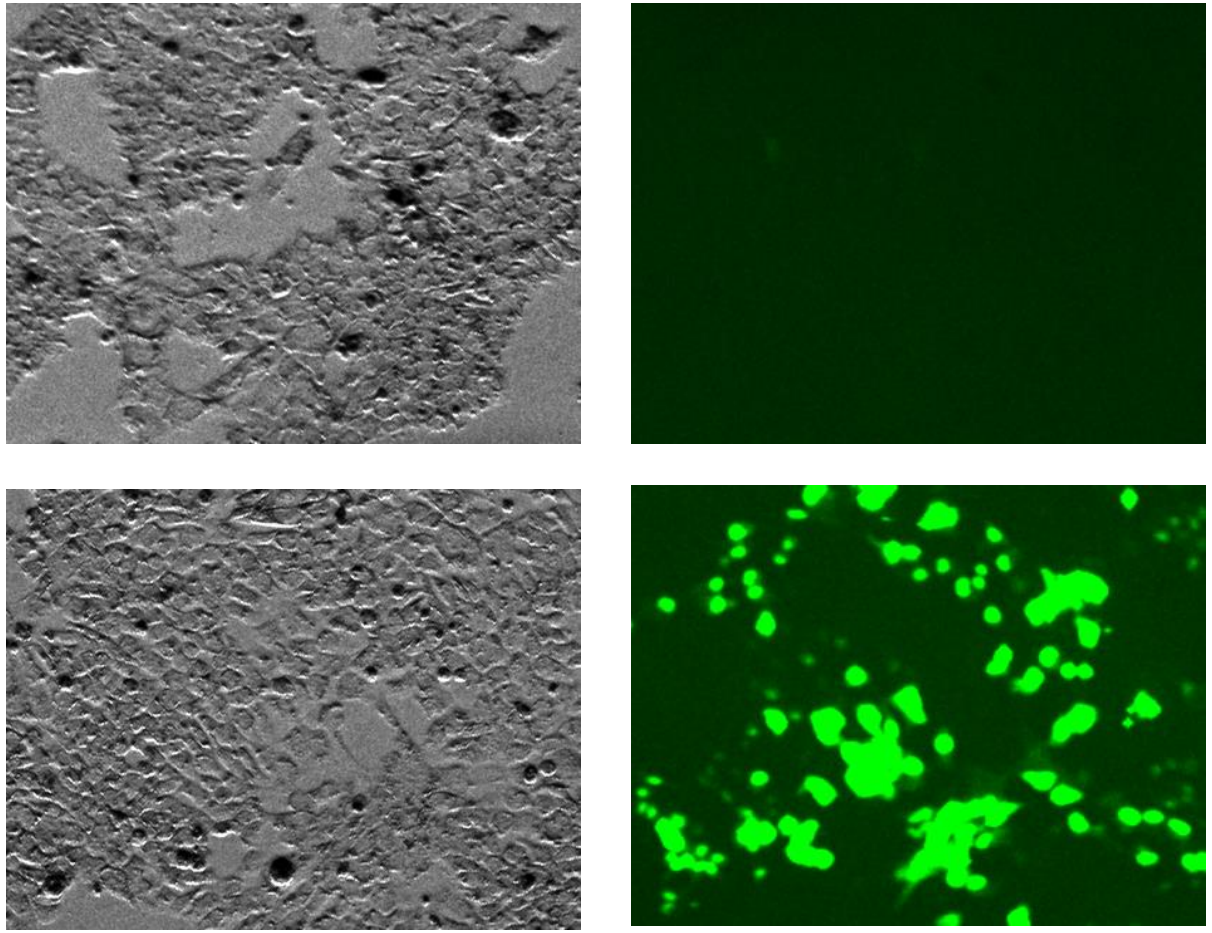




S. Kyrylenko, unpublished

Vis ↓

GFP ↓



←Non-induced

←Induced

hES cells transfected with pTe105: pTRE-FGF2-GFP(22,3kDa)

S. Kyrylenko, unpublished

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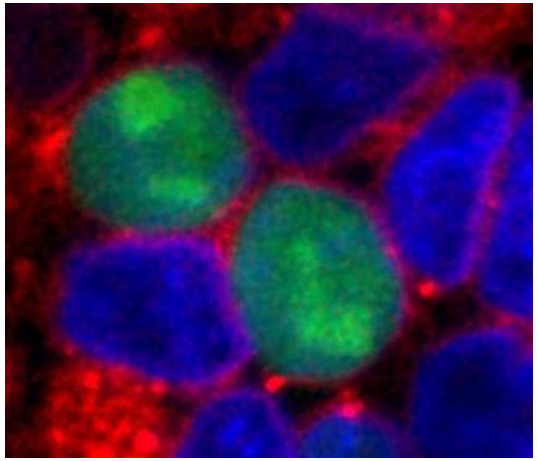
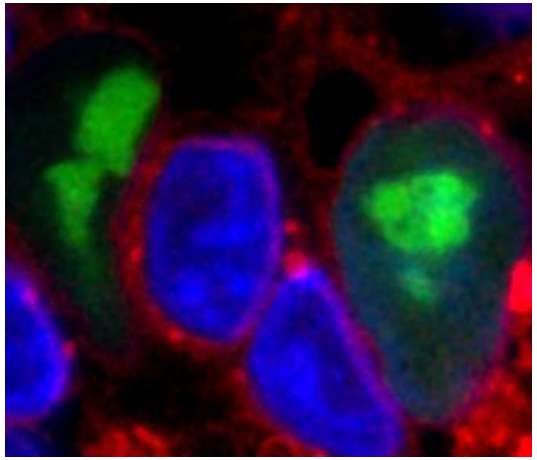
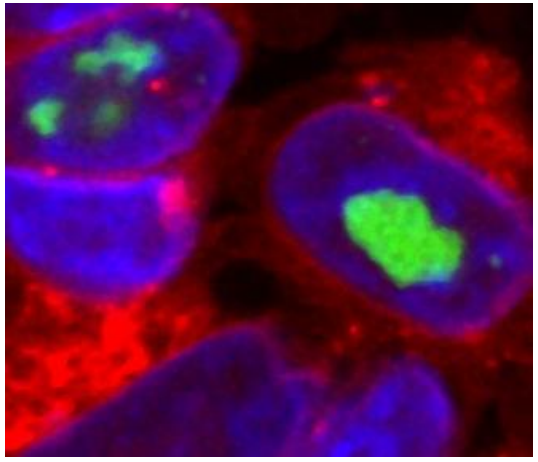


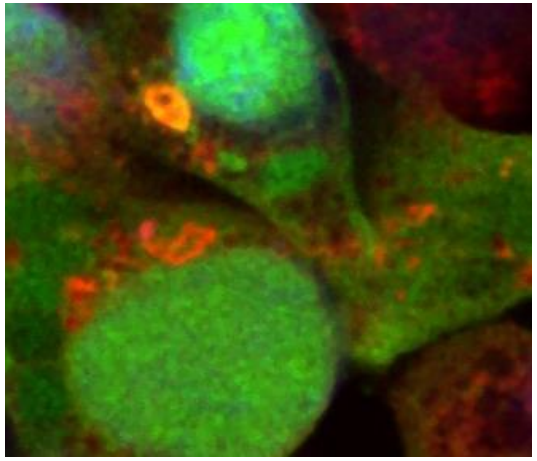
FGF2-GFP
18 kDa



FGF2-GFP
22,3 kDa

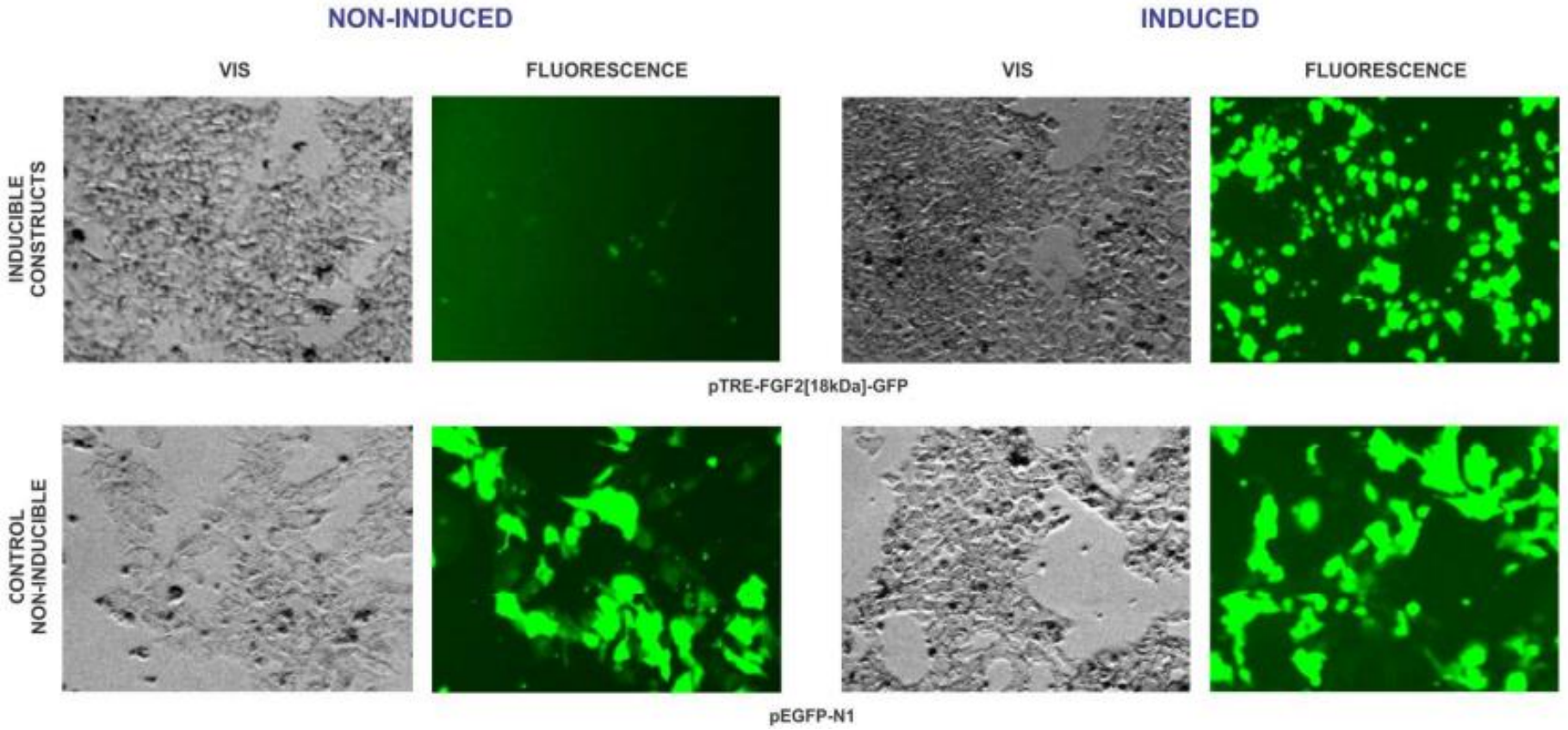


FGF2-GFP
31 kDa

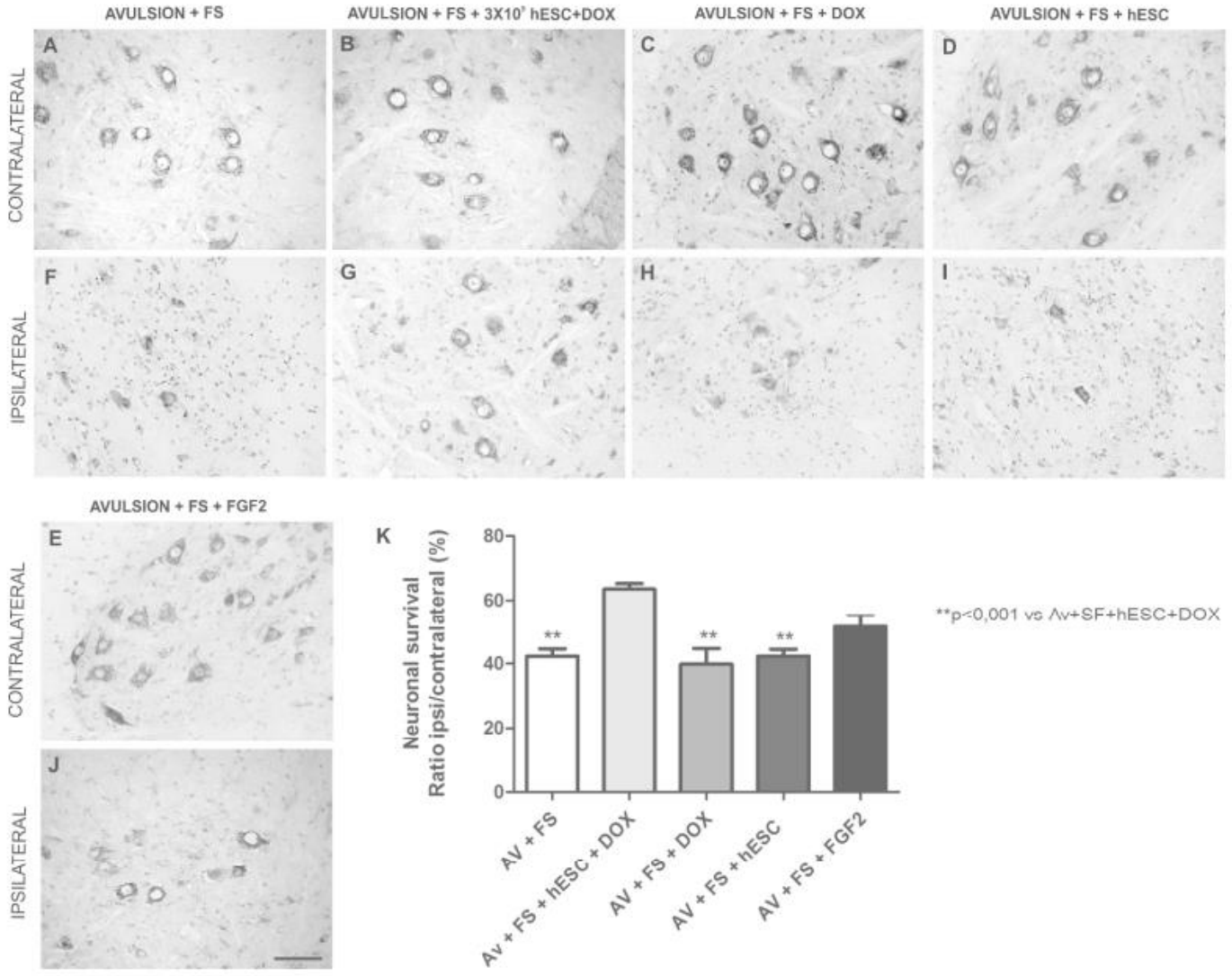


GFP only
control

FGF2-GFP isoforms in hES cells, transient

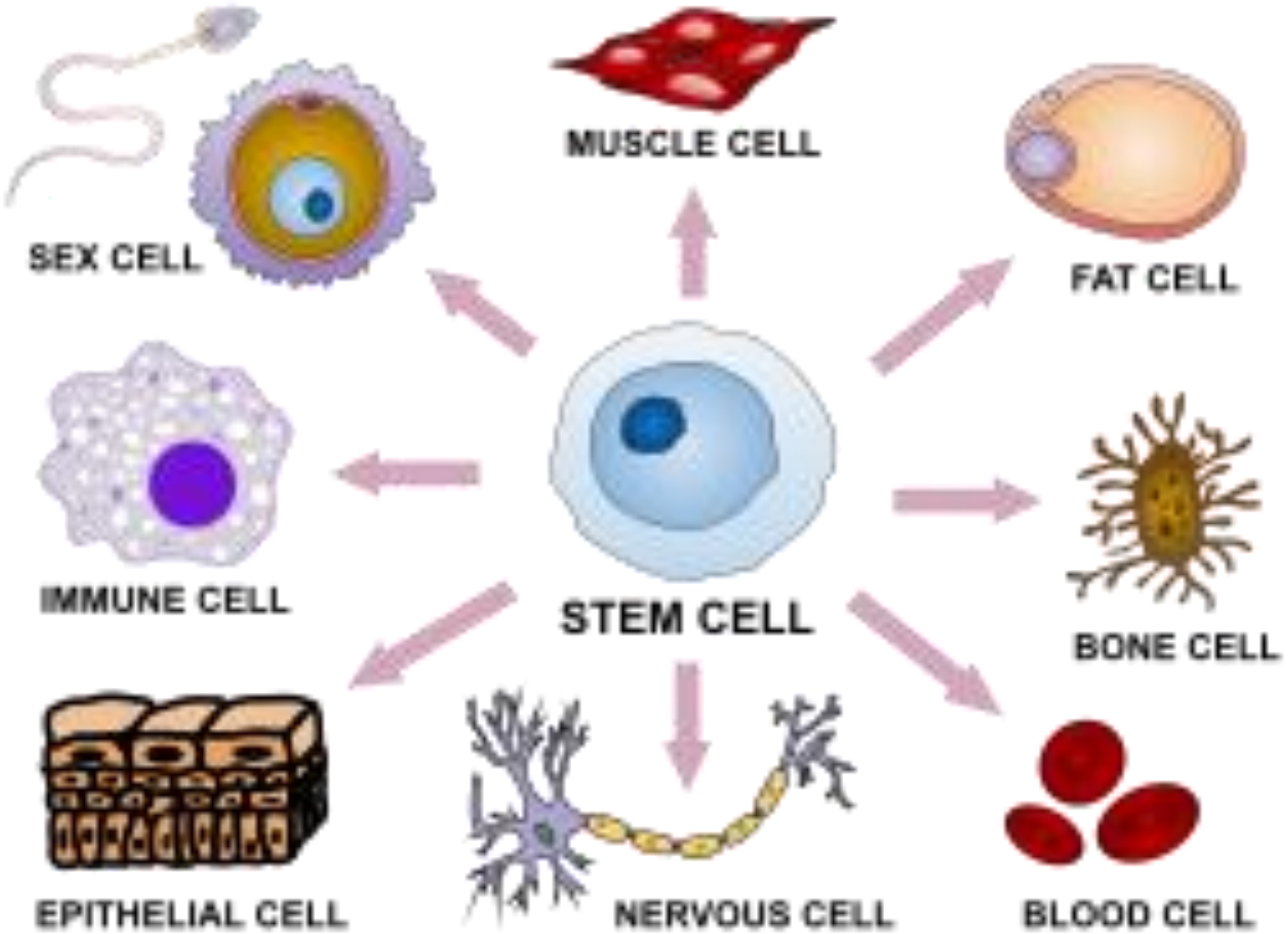


Marta Rocha Araújo[1], Sergiy Kyrylenko[2], Aline Barroso Spejo[1], Mateus Vidigal Castro[1], Rui Seabra Ferreira Junior[3], Benedito Barraviera[3], Alexandre Leite Rodrigues Oliveira **Transgenic human embryonic stem cells overexpressing FGF2 stimulate neuroprotection following spinal cord ventral root avulsion Exp Neurol. 2017 294:45-57**

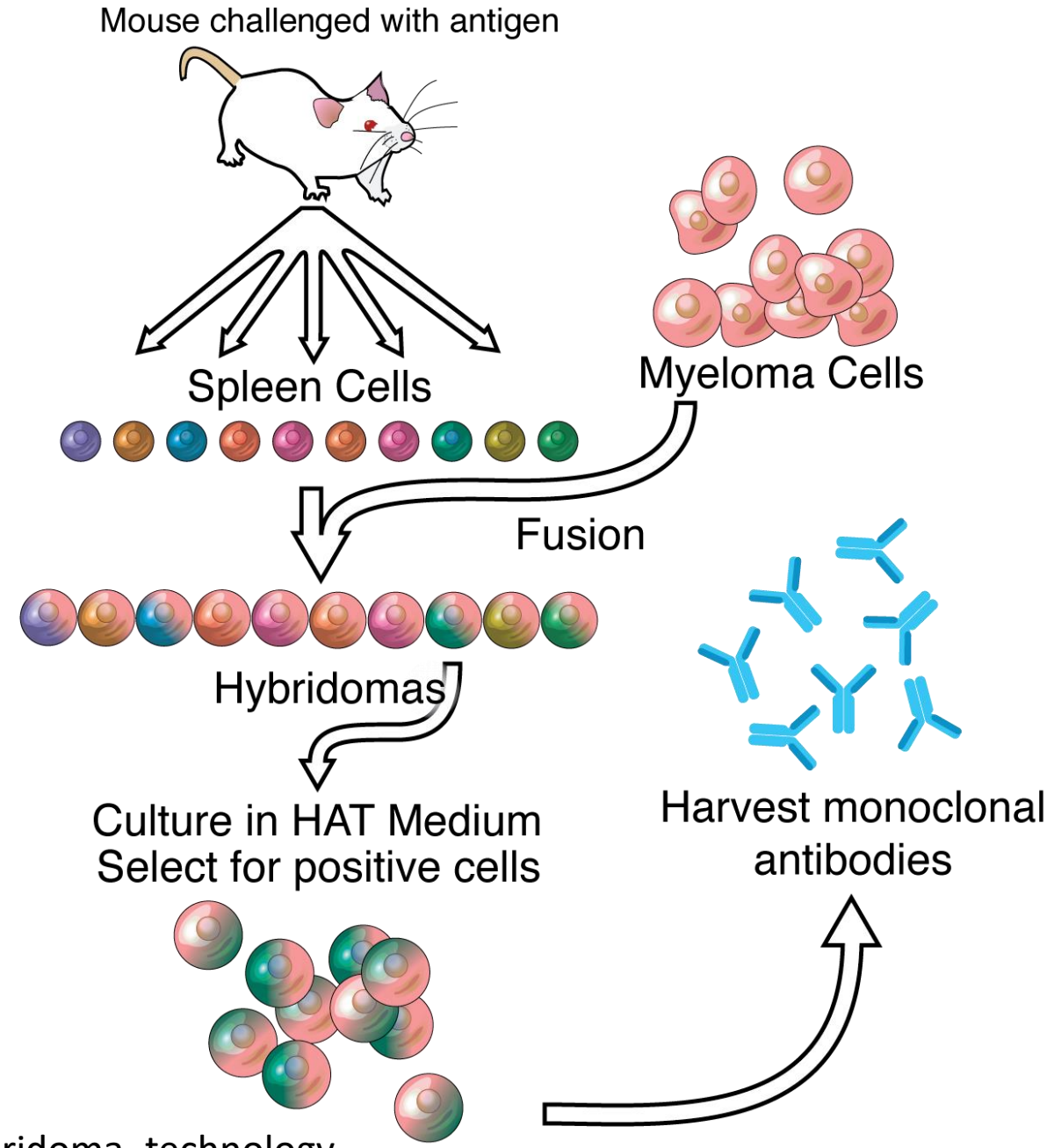


Araújo MR et al 2017

Figure 3. Motoneuron survival after VRA. (A-J) Nissl staining in cross sections of the spinal cord at lamina IX in five different experimental groups, 2 weeks following ventral root avulsion. Note the decreased number of motoneurons, ipsilateral to the lesion. Also, observe the significant improvement of neuronal survival in the group treated with hESC+DOX. (K) Average of the number of motoneurons present in the spinal cord, 2 weeks after avulsion (** p<0.001 - n=5). Scale bar = 50 µm. Mean±SE.



https://en.wikipedia.org/wiki/Cultured_meat



https://en.wikipedia.org/wiki/Hybridoma_technology

Cultured meat

https://en.wikipedia.org/wiki/Cultured_meat

Wish you very successful cell clture experiments!

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