

1. What are tumor organoids?
2. Why are they important to personalized medicine?
3. How does bioinformatics play a role?

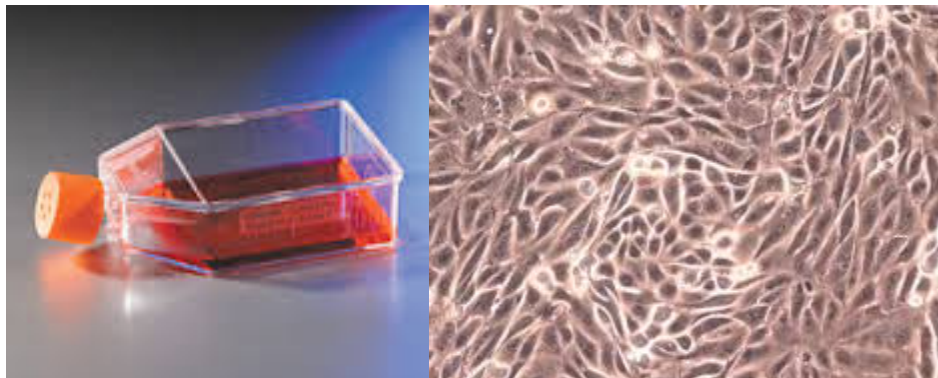
Brief Cell Culture History:

- Cell culture is the growth of plant or animal cells outside of their natural environment under controlled conditions
- Late 1800's first documented attempts with tissue culture- embryonic chicken
- Major advancements in cell culture in the 1940's – polio vaccine
- First cell line – HeLa 1951
- Advancements in 3D culture – 2000's

2D Cell Culture:

Standard Media

Base Media	DMEM or RPMI-1640	500 mL
Prepared Aliquots	10% FBS	50 mL
	Penicillin/Streptomycin	5 mL



3D Cell Culture (Tumor Organoids):

Advanced DMEM/F12
Noggin
Rspondin
B27 Supplement
Nicotinamide
GlutaMAX-1
Penicillin/Streptomycin
HEPES
N-Acetylcysteine
Primocin
Recombinant Human FGF-basic
Human Recombinant FGF10
PGE2
SB202190
Mouse Recombinant EGF
Y-27632 (Rock)
A-83-01
NRG
Gastrin

