

# Shock wave therapy alone has no impact on cancer growth

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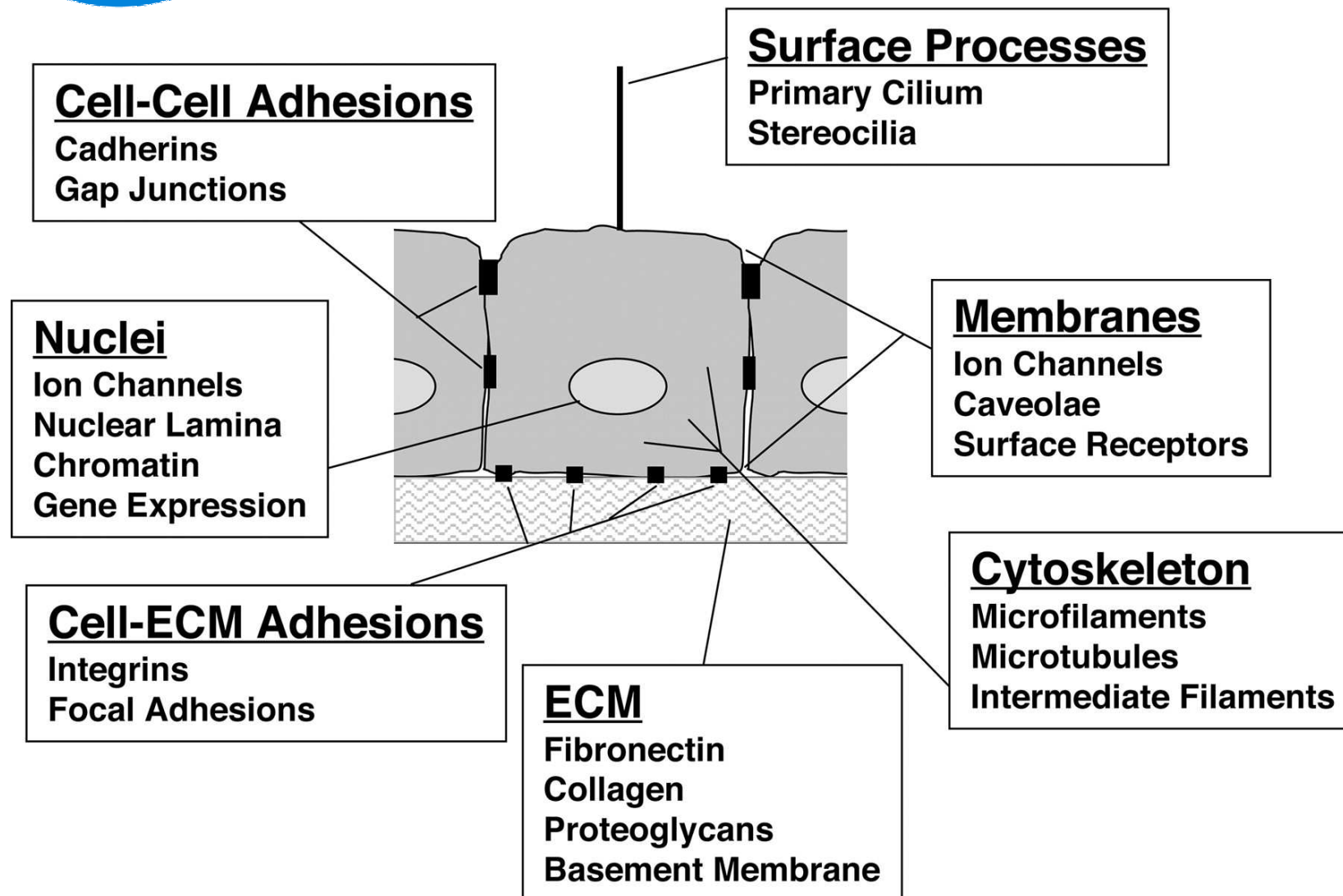


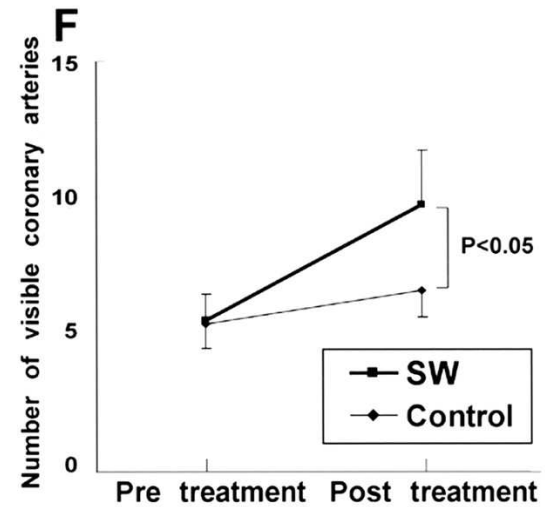
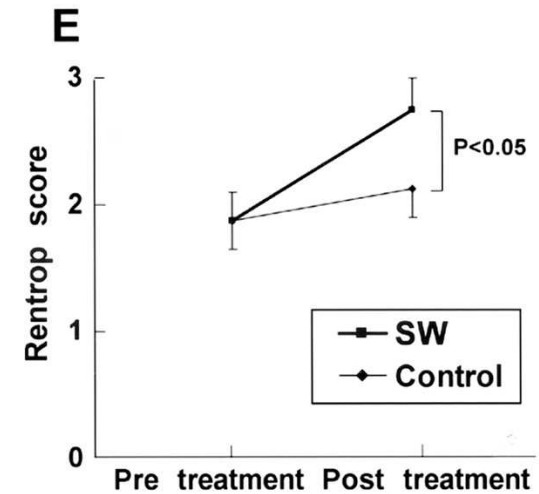
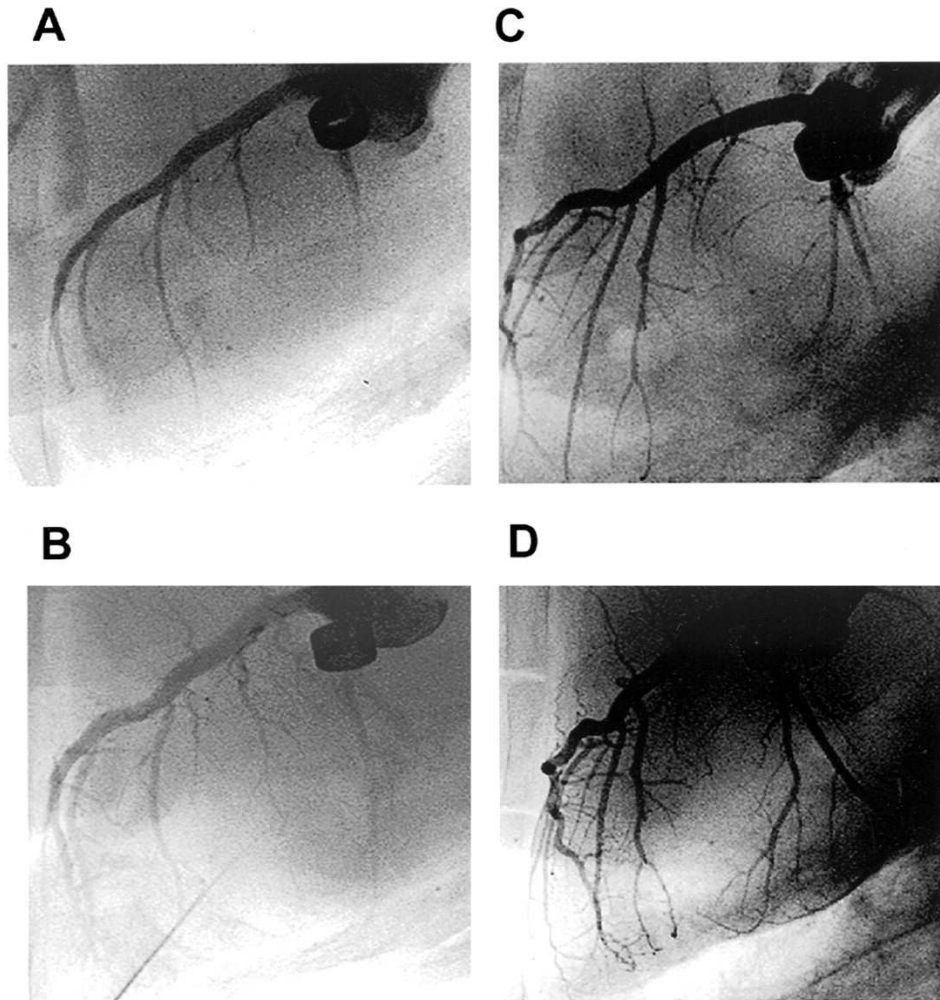


# Background ESWT



- 70ies: therapy for kidney stones
- Therapy for bone and tender disorders
- Recently: wound healing, ulcers and burns
- 2000: Cardiovascular tissue engineering
- Effect on cancer cells??





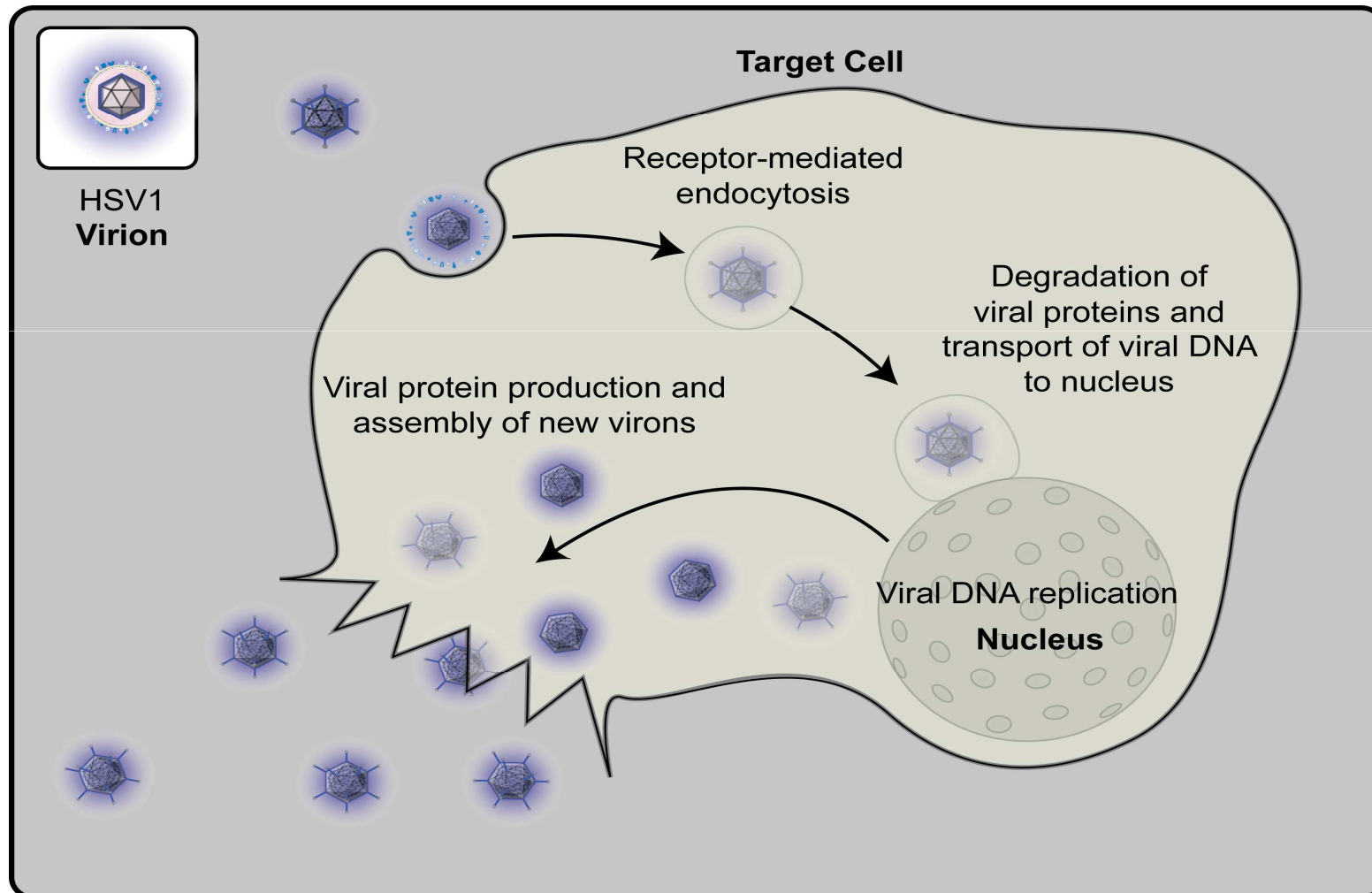


## Basic Idea



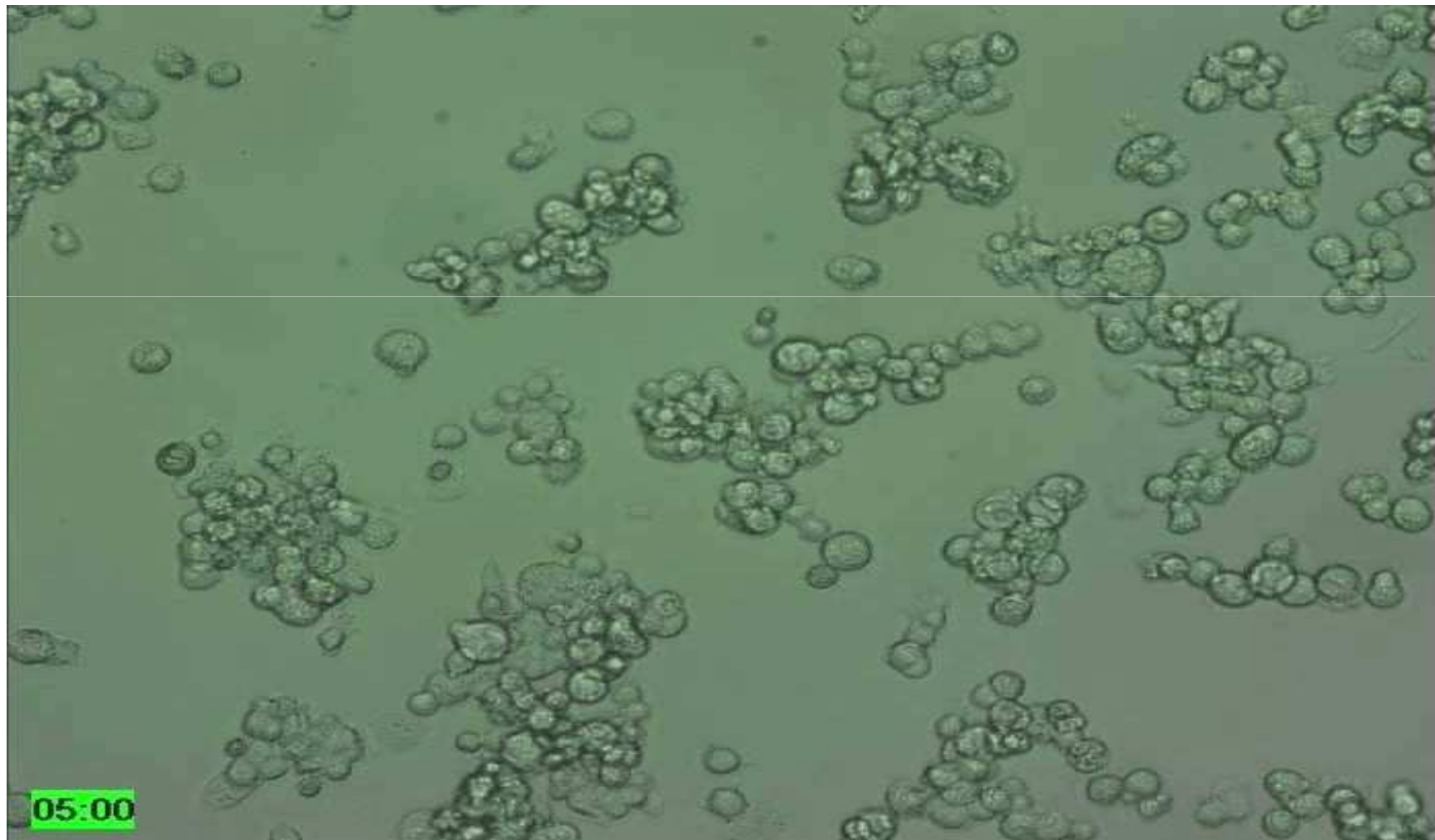
- SWT may influence tumor growth  
enhance tumor growth/apoptosis?
- SWT may improve chemotherapy  
increase agent uptake/influence cell cycle?
- SWT may increase viral susceptibility  
increase viral uptake/ activate cell cycle

# Viral therapy





# GFP Expression after viral infection







## In vivo project



- HCT 8 colorectal cancer cell line
- Treatment groups (tumors)
  - 6 control
  - 24 SWT only
  - 6 Virus only (NV 1020)
  - 6 Chemo only (5 FU)
  - 12 SWT + Chemo
  - 12 SWT + Virus





## In vivo project



- 2 flank tumors à  $1e^7$  cells/animal
- Await tumor sizes of  $10\text{mm}^3$
- Treat animals

ESWT: 300 impulses/tumor

frequency: 3Hz

energy flux density:  $0,1\text{mJ}/\text{mm}^2$

Virus:  $1e^7$  pfu NV 1020/tumor

Chemo: 5 FU

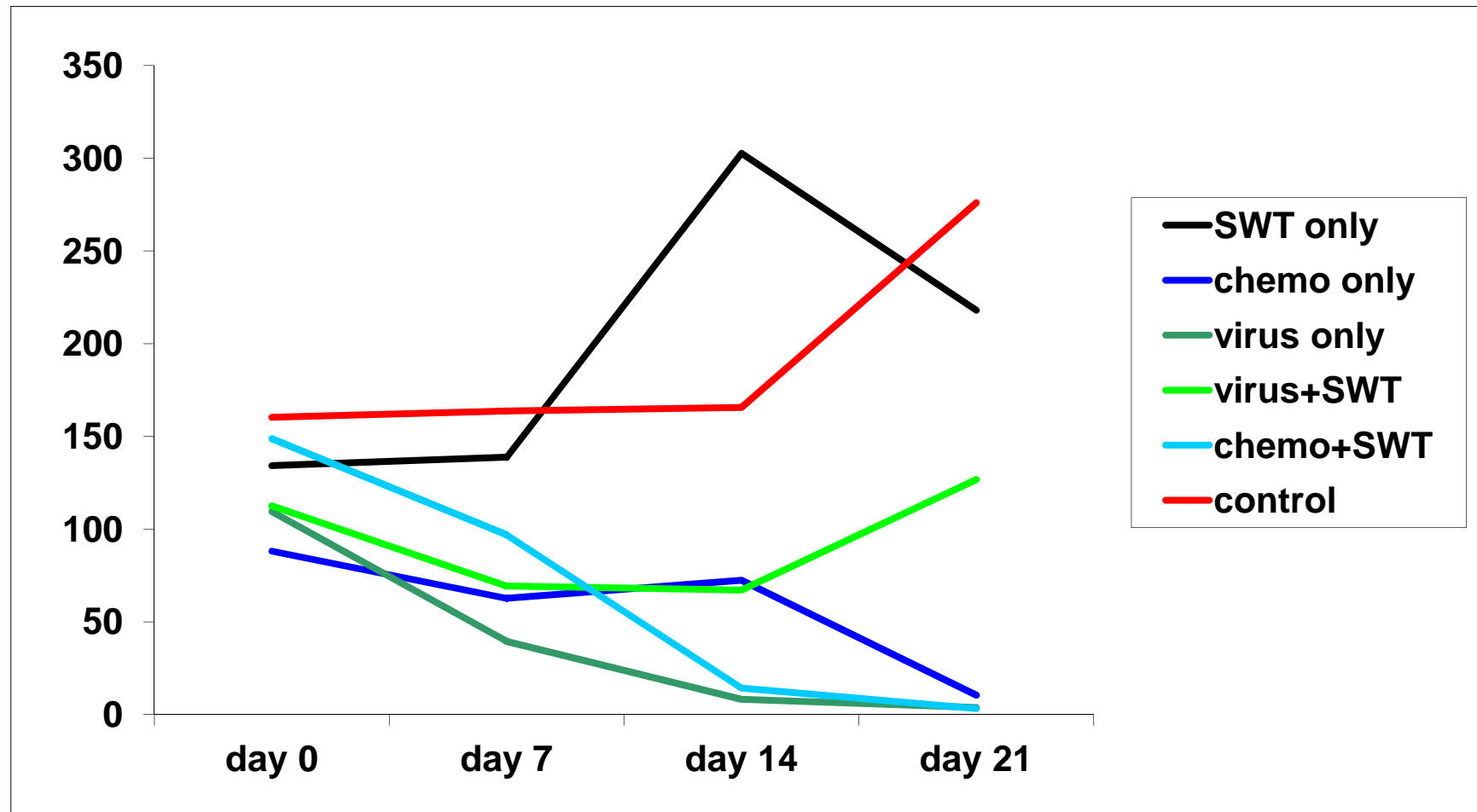
- FU for 3 weeks (tumor size, weight)
- Sacrificed animals > histological work up



Dermagold 180  
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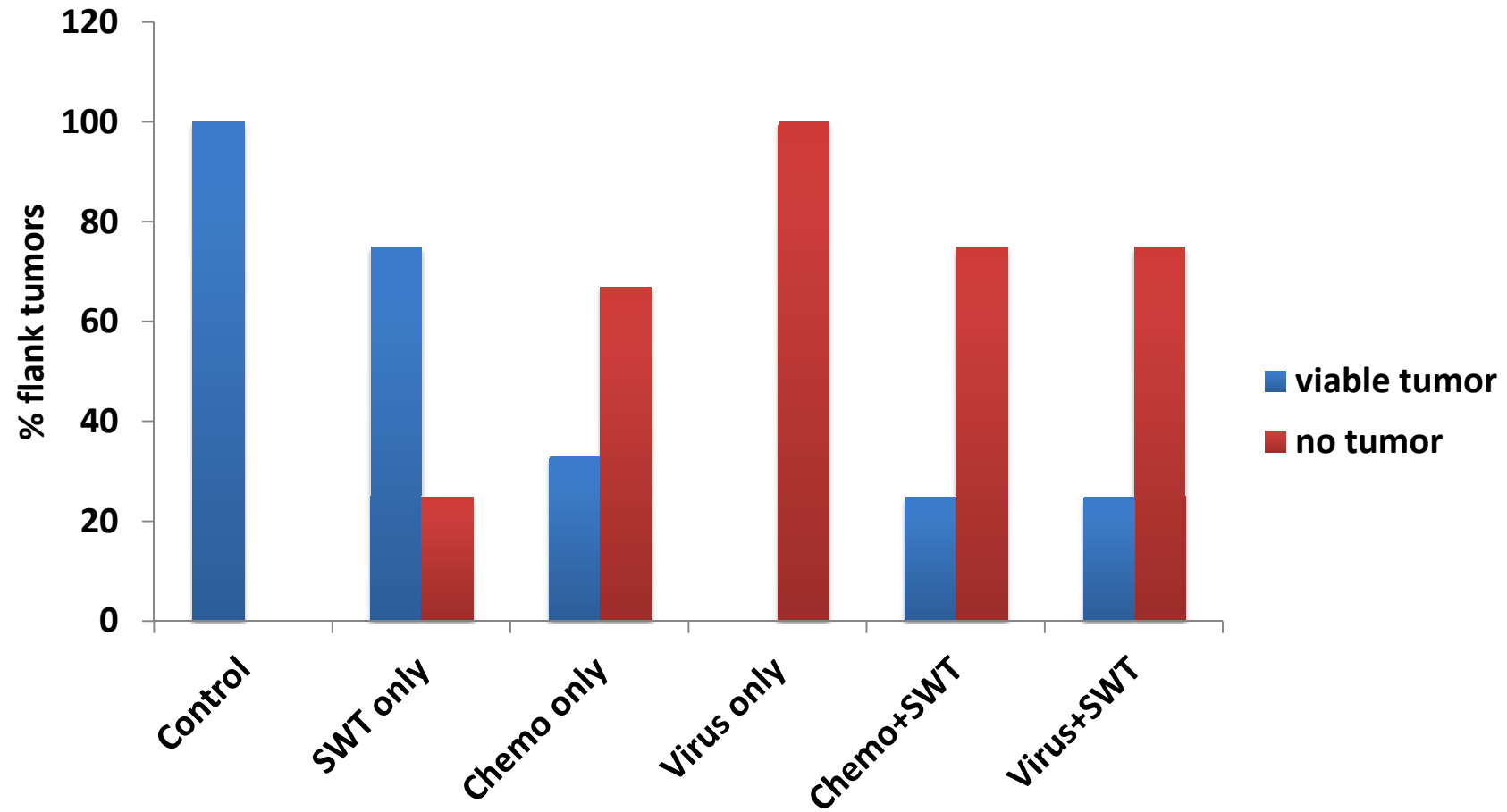


# Survival



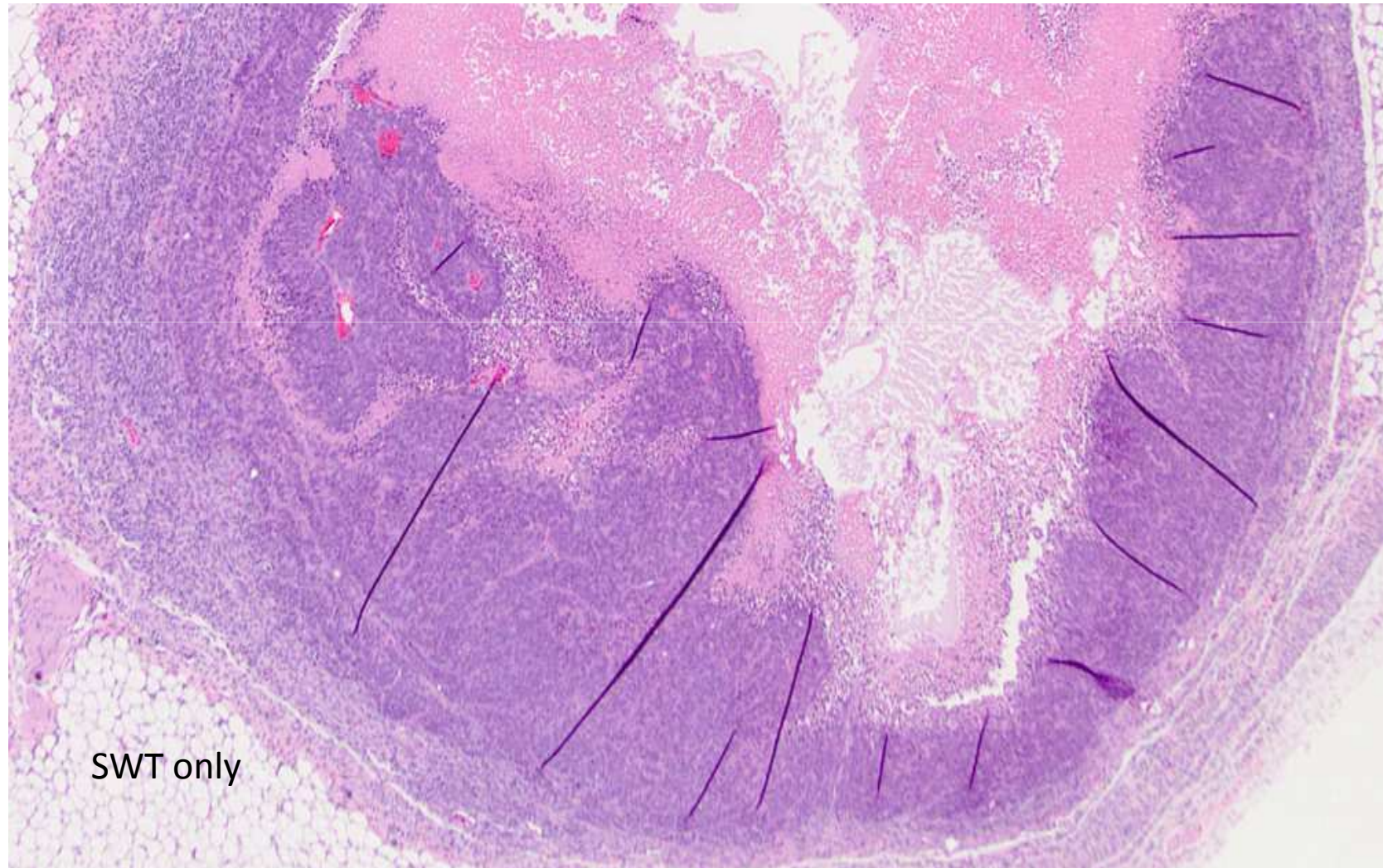


# Tumor viability





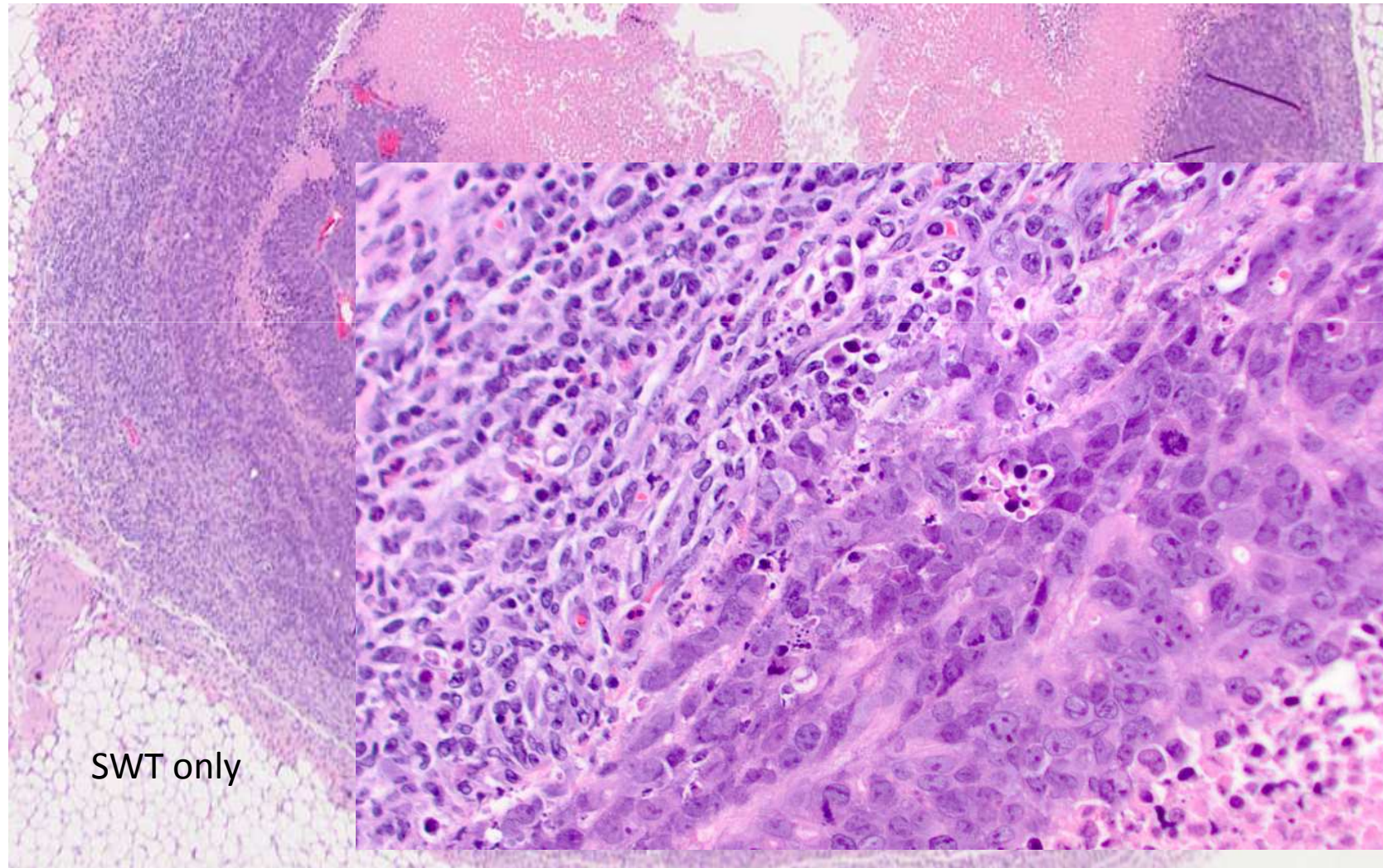
# Histopathology







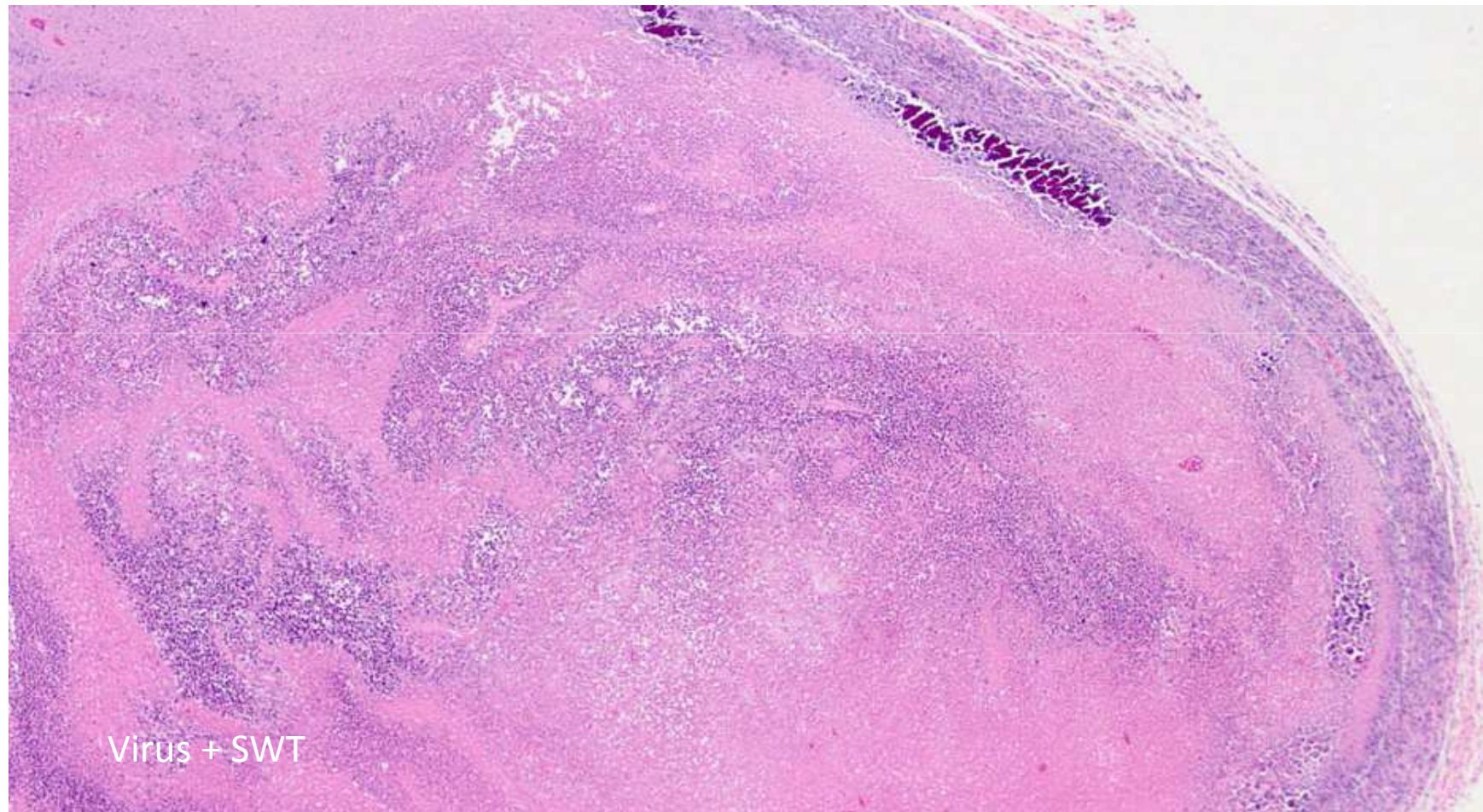
# Histopathology







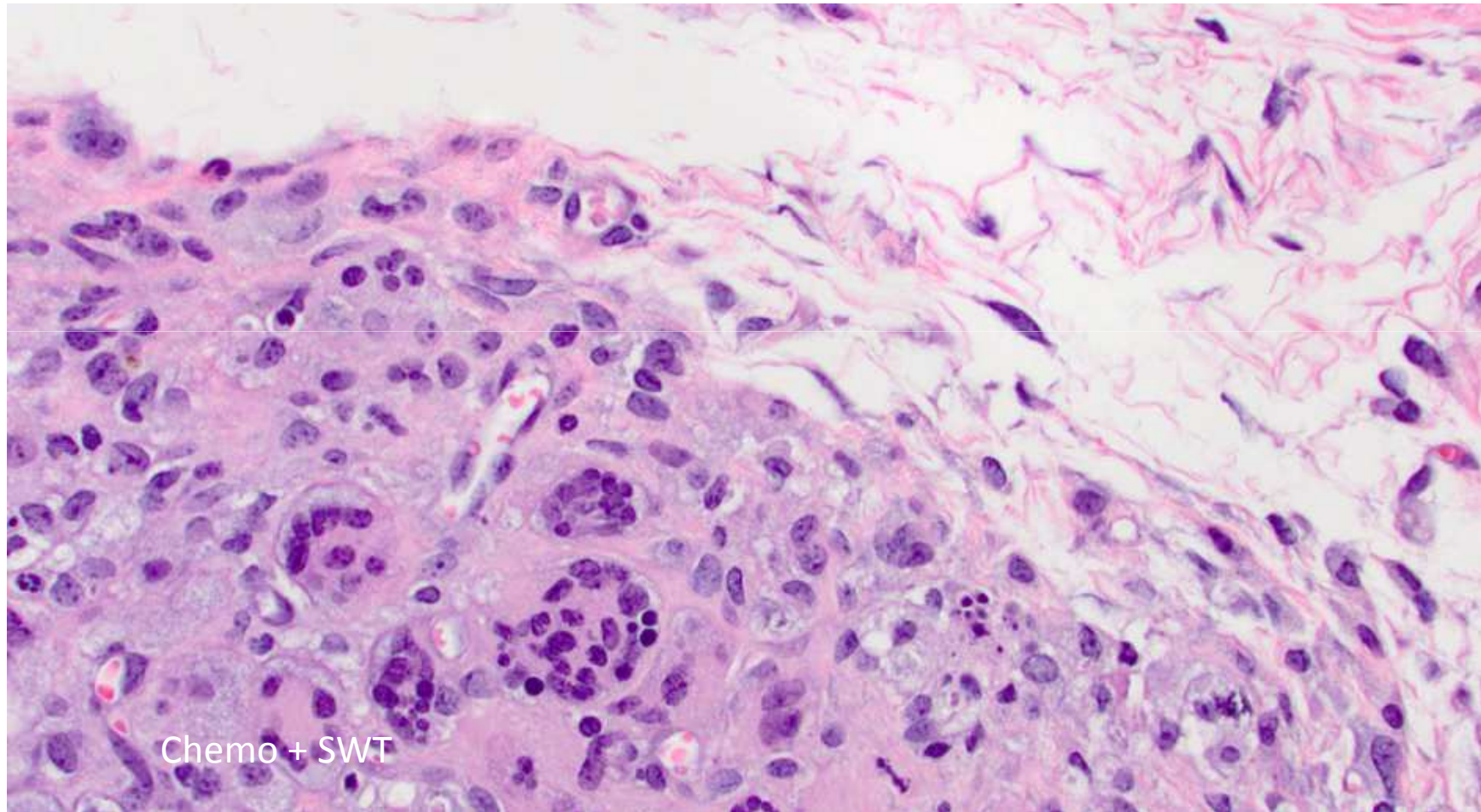
# Histopathology







# Histopathology







# Conclusion



- Current setting:
  - ESWT has no impact on tumor growth
  - ESWT does not improve chemotherapy  
oncolytic viral therapy
- Future
  - Investigate different types of dosing  
therapy intervalls



# Acknowledges



- Thanks to Memorial Sloan Kettering Cancer Center and Dr. Y Fong
- Tissue Regeneration Technology  
Dermagold 180