

FOREVER YOUNG



HUMAN BODY IS A PERFECT PRODUCT





IT,S A PRODUCT OF ABOUT 5 -8 BILIONS
YEARS OF EVOLUTION

BUT THE PRODUCT THEY
HAS ONE CONSUMES
DISADVANTAGES



THEY
CONSUMES







REPLACEMENT
PARTS

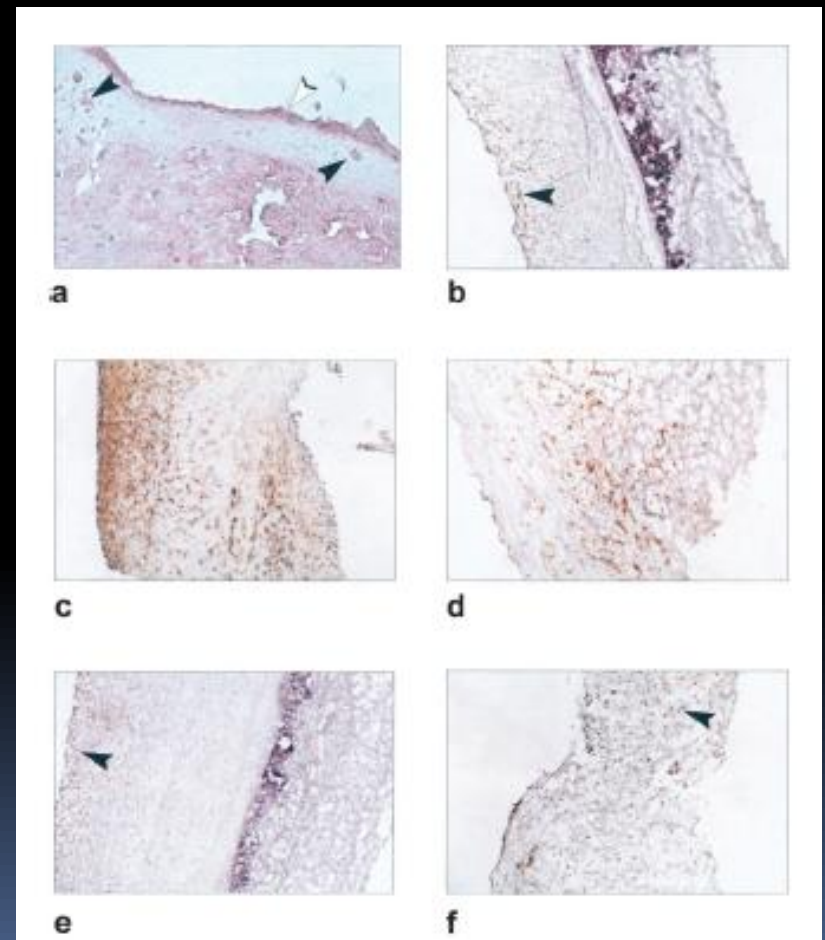
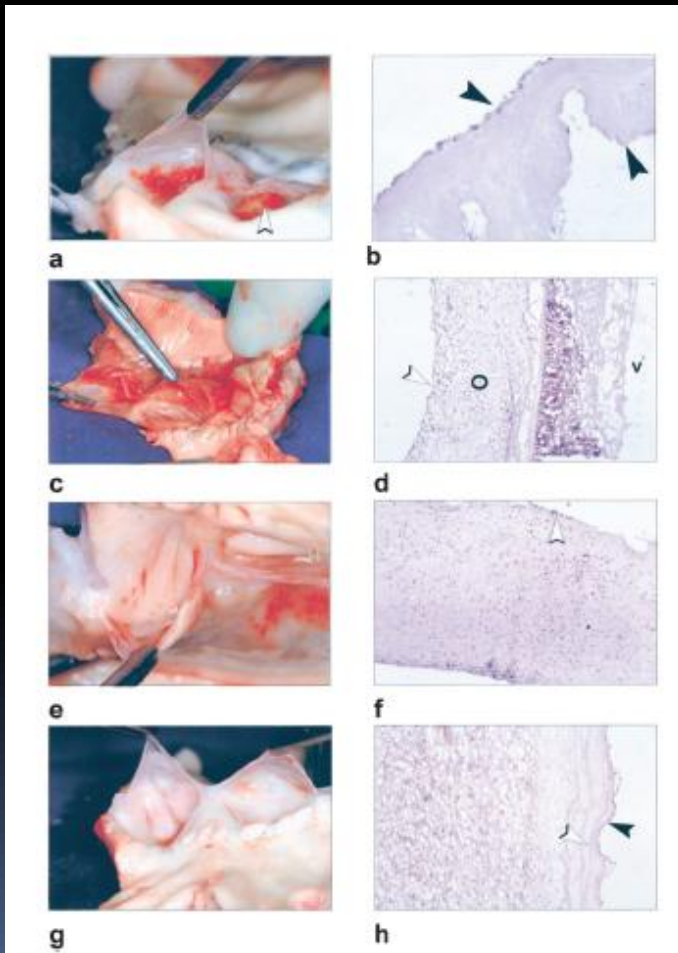
THE BEST CHOICE
FOR THE RESTORATION
OF DISEASED HUMAN ORGANS
ARE THE NATURAL
BIOLOGICAL MATERIALS



Tissue Engineering of Pulmonary Heart Valves on Allogenic Acellular Matrix Conduits

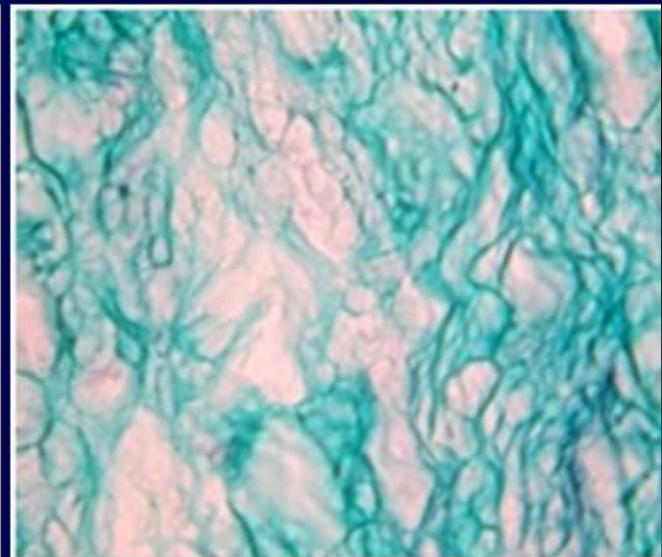
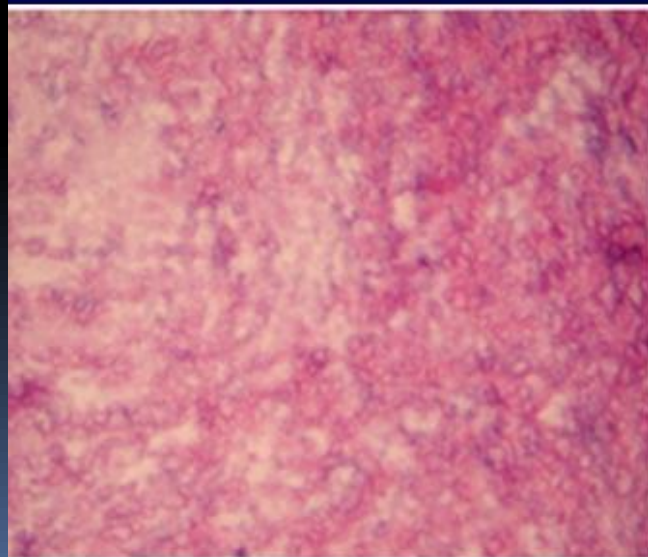
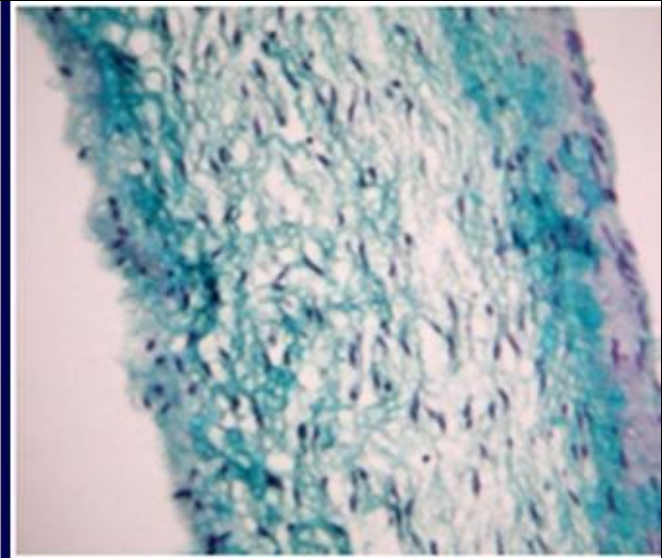
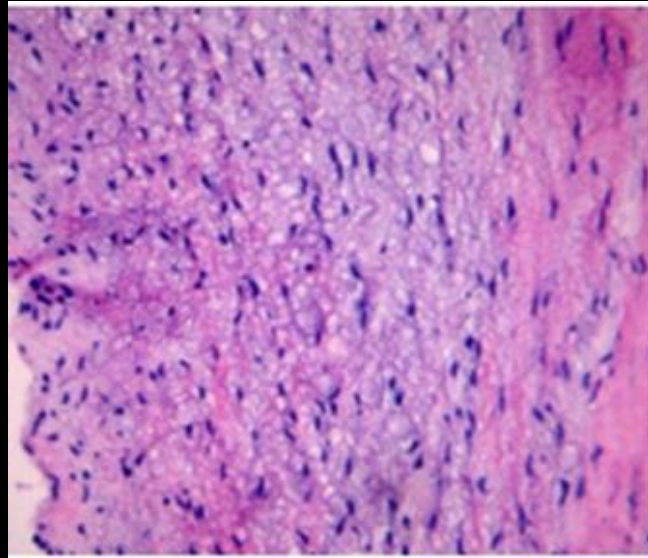
In Vivo Restoration of Valve Tissue

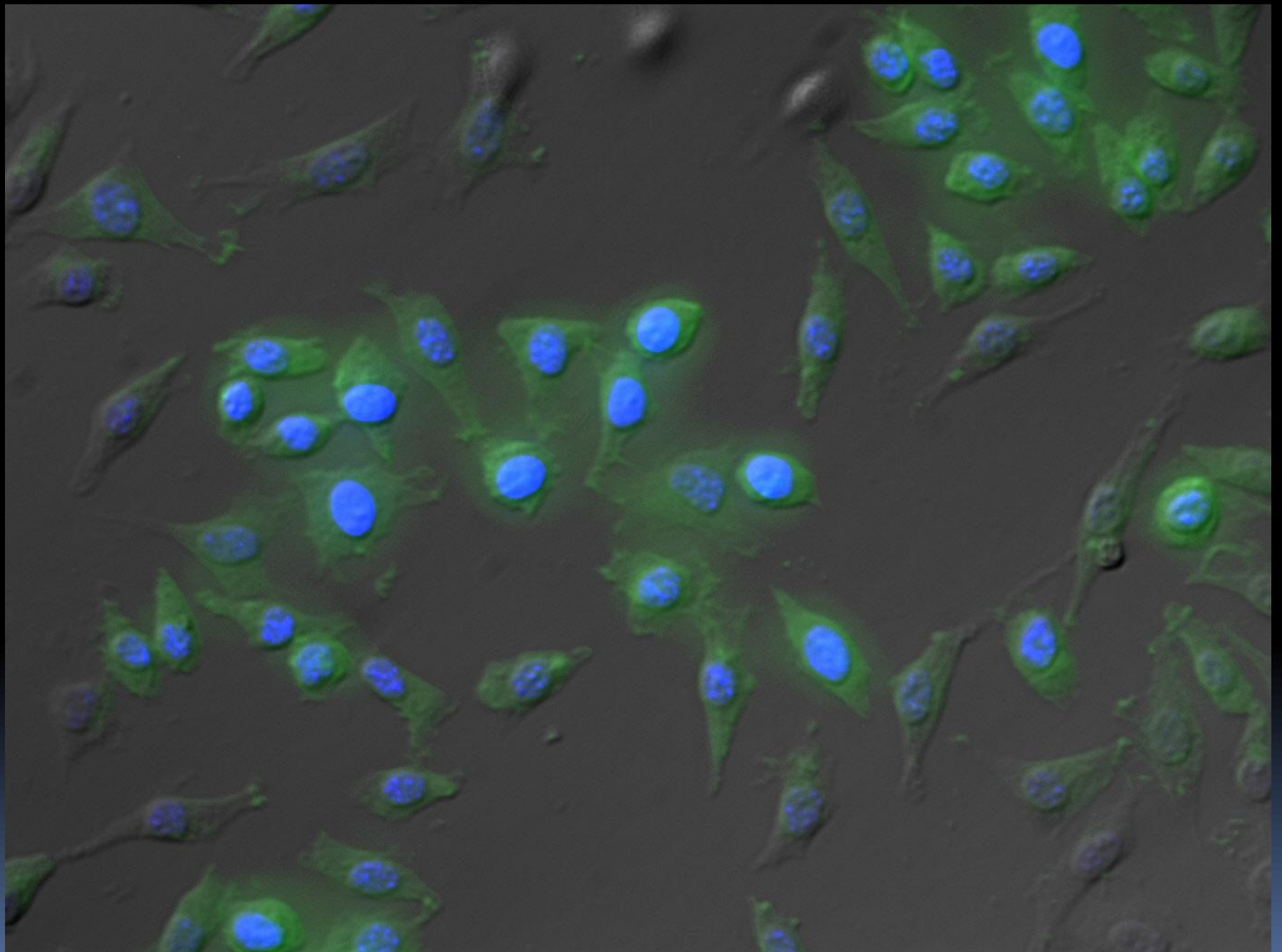
Gustav Steinhoff, MD, PhD; Ulrich Stock, MD; Najibulla Karim; Heike Mertsching, PhD; Adine Timke; Rolf R. Meliss, MD; Klaus Pethig, MD; Axel Haverich, MD, PhD; Augustinus Bader, MD, PhD



Acellular Tissue for The Construction of Heart Bioprosthesis

- Light microscopic section of porcine aortic heart valve leaflets treated with SDS incubation combined with 48h Trypsin/EDTA incubation: A,B – native tissue, C,D – acellular.





ADHESION

PROLIFERATION



MIGRATION

DIFFERENTIATION



RECIPIENT

DONOR

IMBALANCE

FOLLOWING PARAMETERS WAS TESTED

Cell adhesion

Platelet activation and the formation of platelet-leukocyte aggregates – CD62P/CD45

Cell growth, migration and differentiation

CELL ADHESION, GROWTH, SEEDING ABILITY

The polymers were seeded with fibroblast line L 939 and placed inside culture dishes. The cell suspension was poured on the polymers surface and cultured for 24 h at 37°C with 5% CO₂ in a complete medium. The cell seeding ability was confirmed using light microscopic and fluorescent microscopy technique

BLOOD INTERACTION

POSSIBLE EFFECT

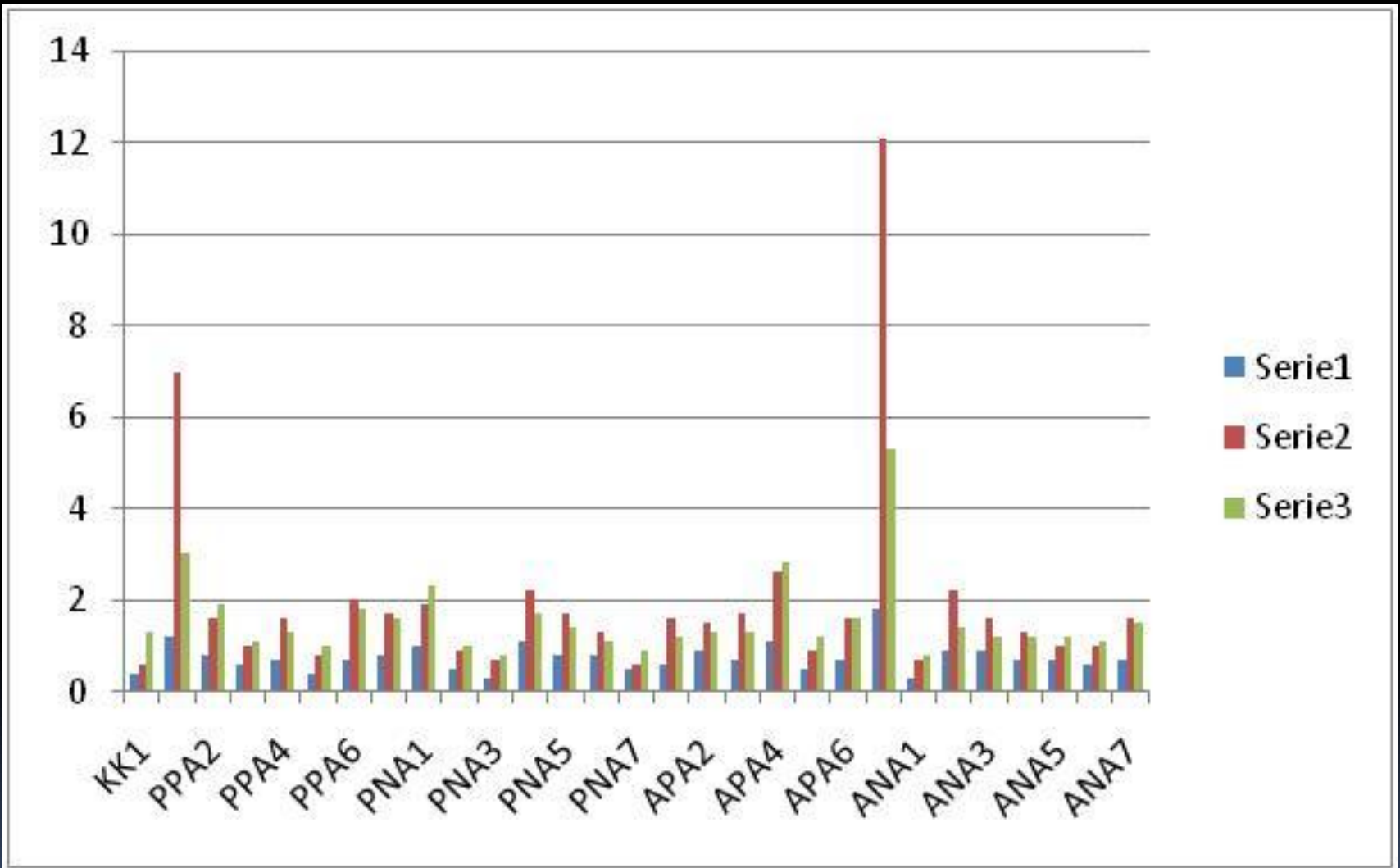
NO INTERACTION

PLATELATE ADHESION

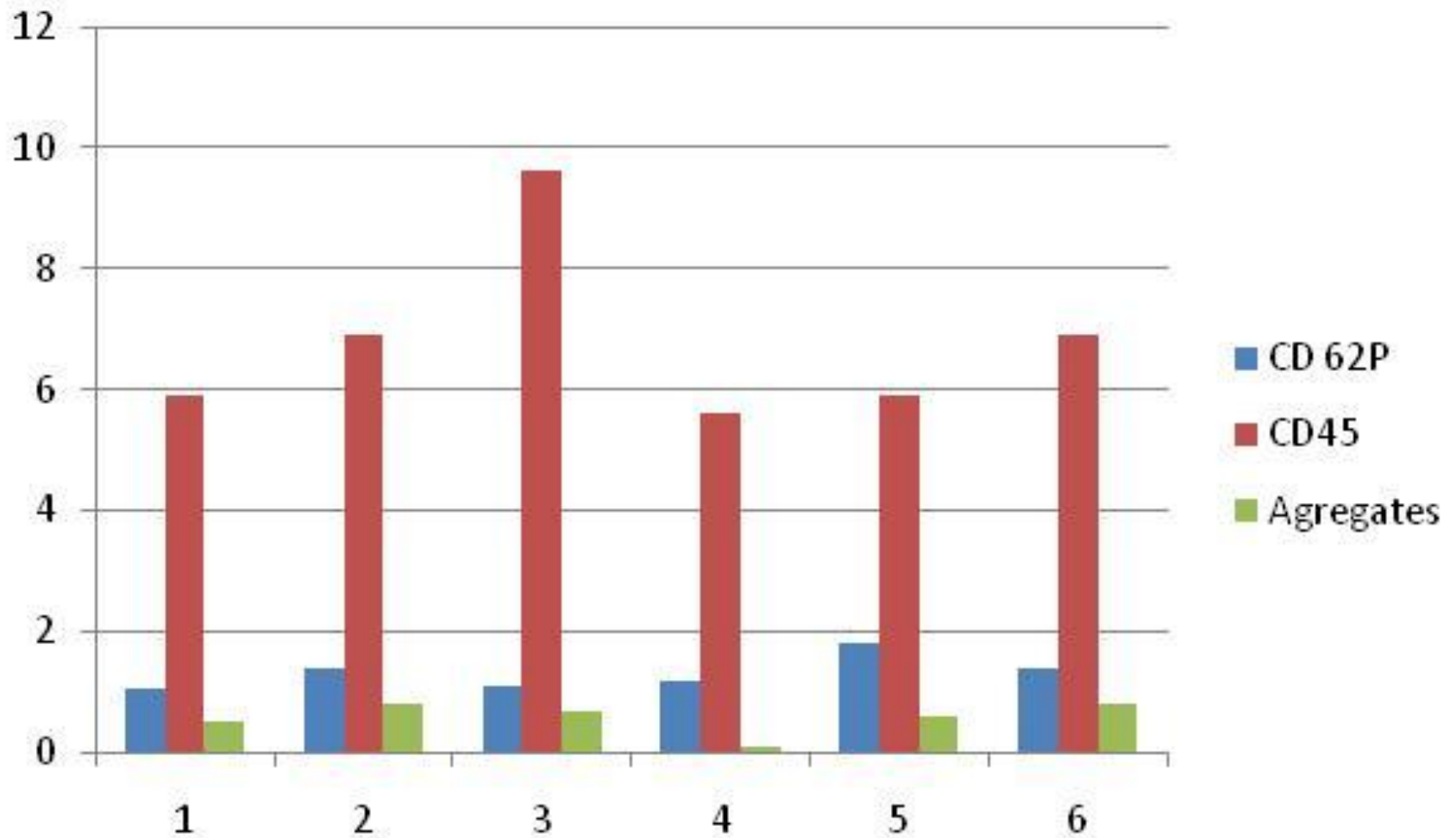
TROMBOEMBOLISATION

MICROEMBOLISATION

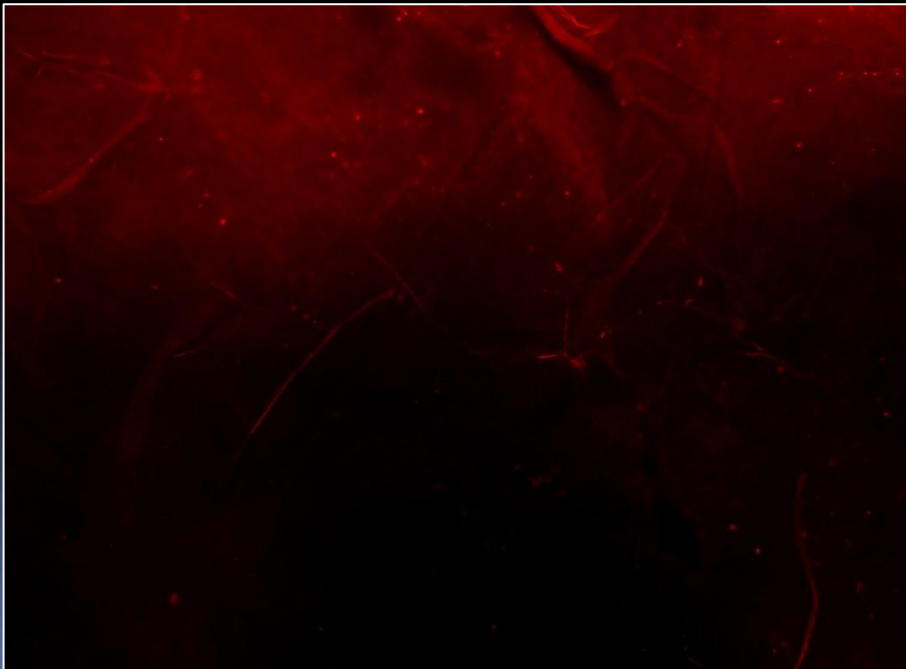
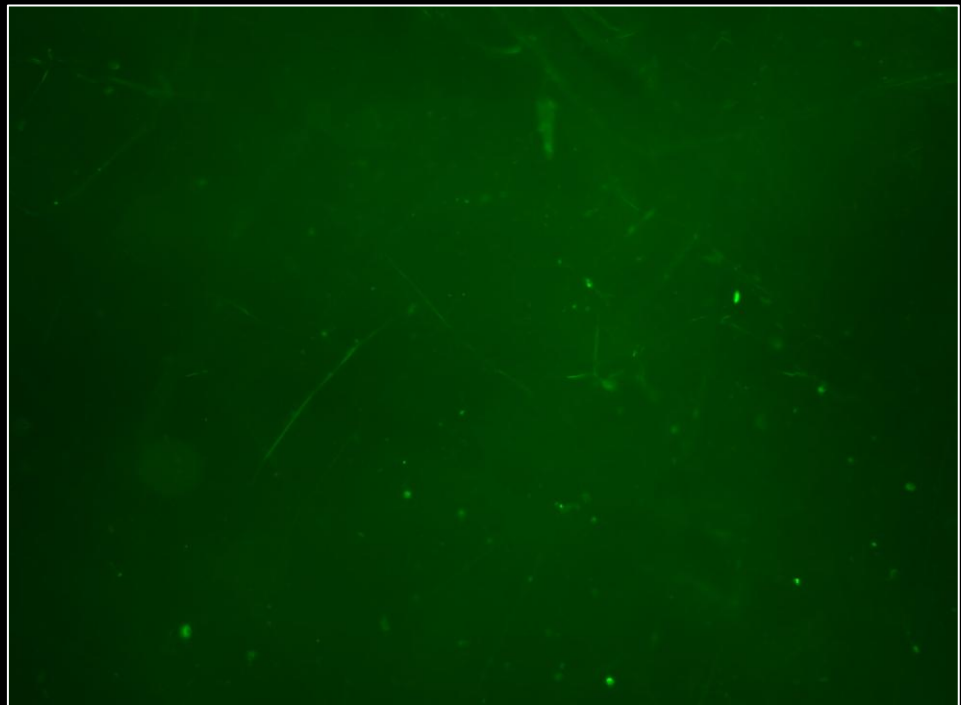
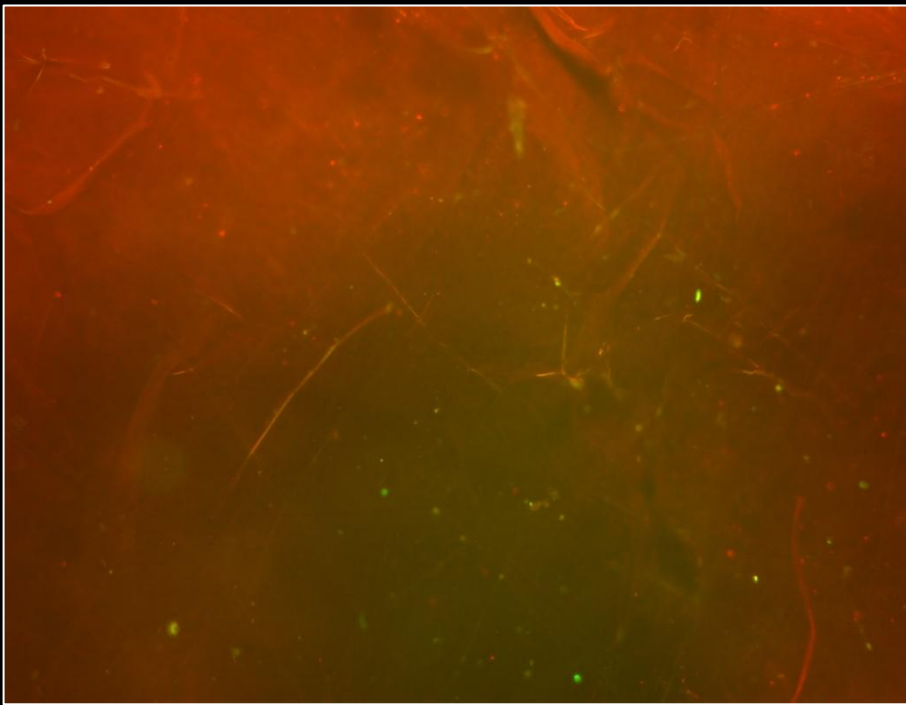




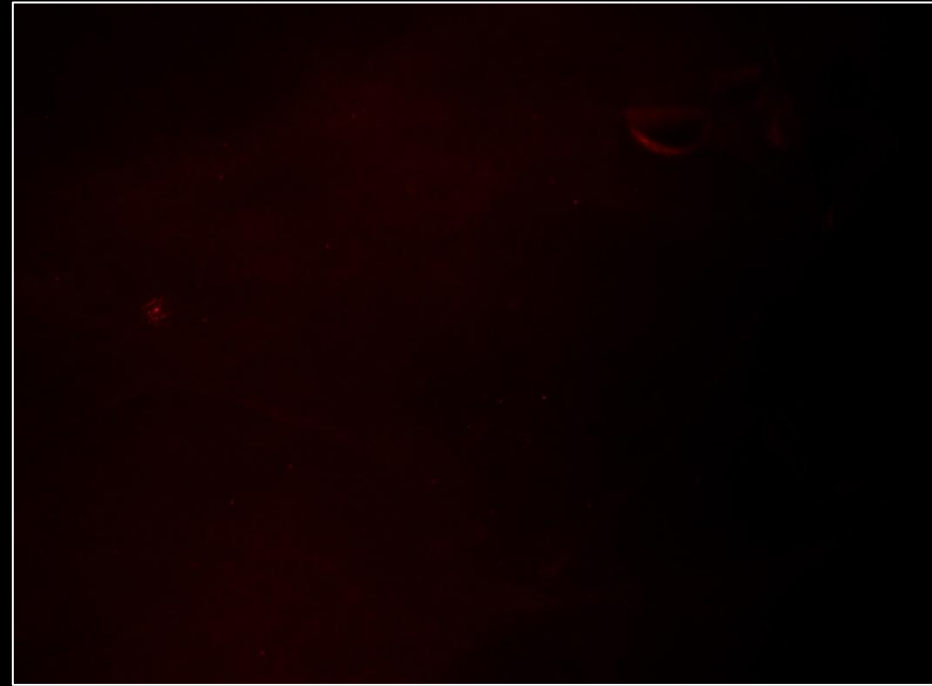
Platelate activation and formation of Platelate-Leukocyte complex on the native tissue



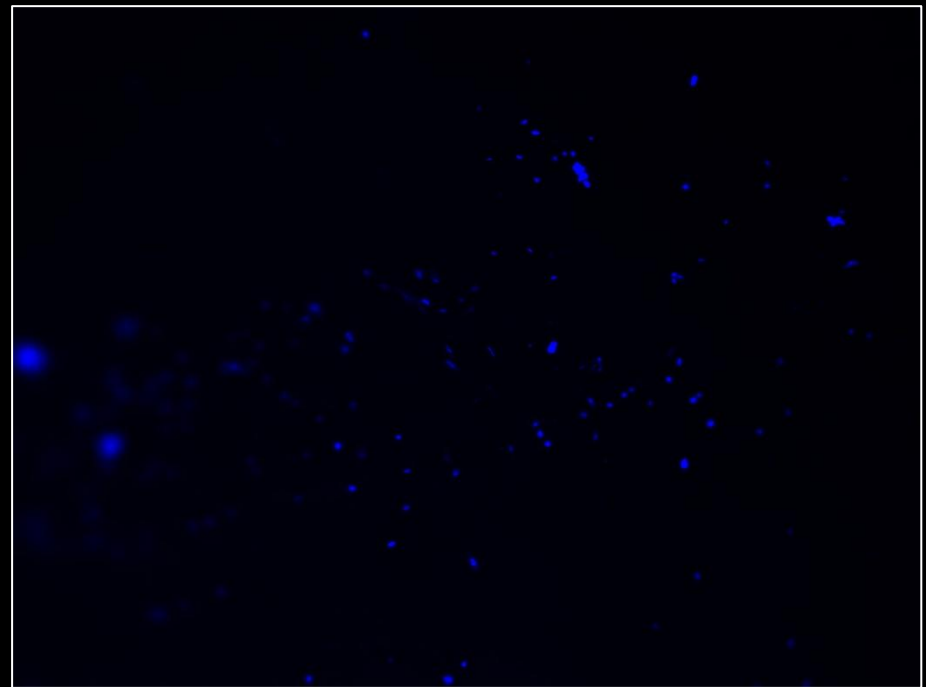
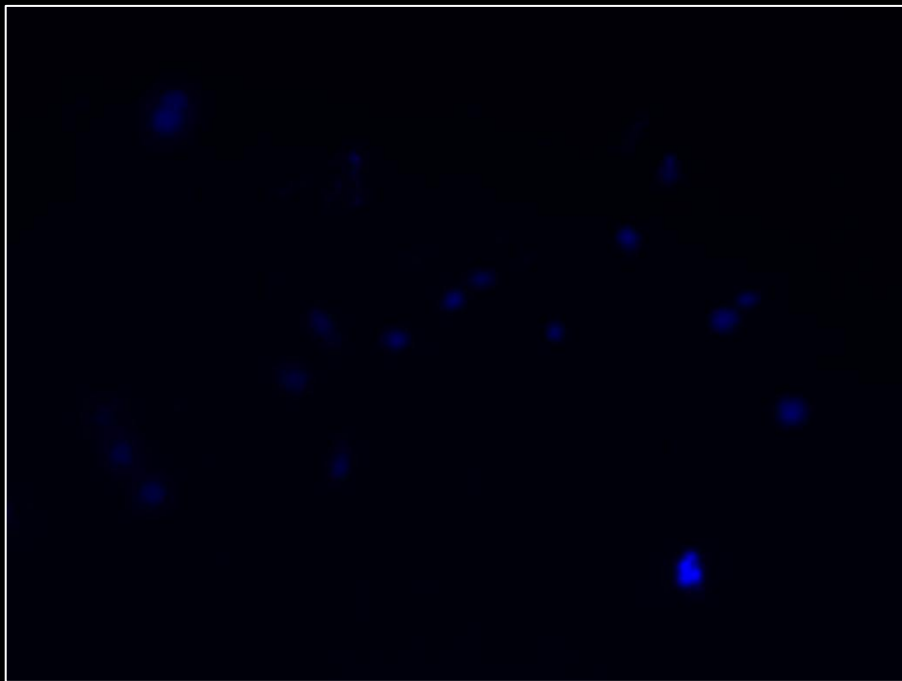
Platelet activation and formation of Platelet-Leukocyte complex
on the modified polymer



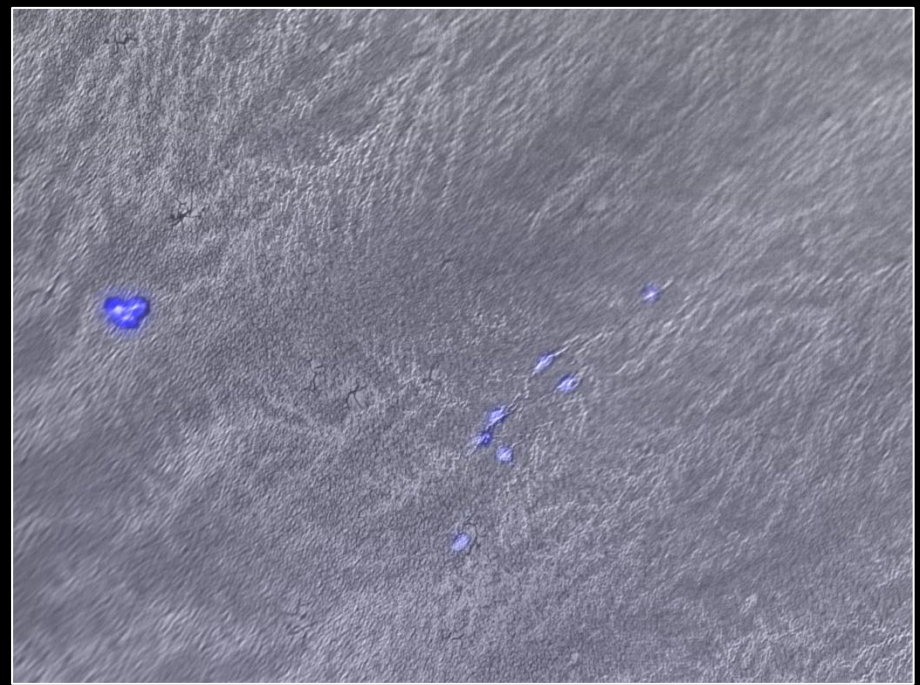
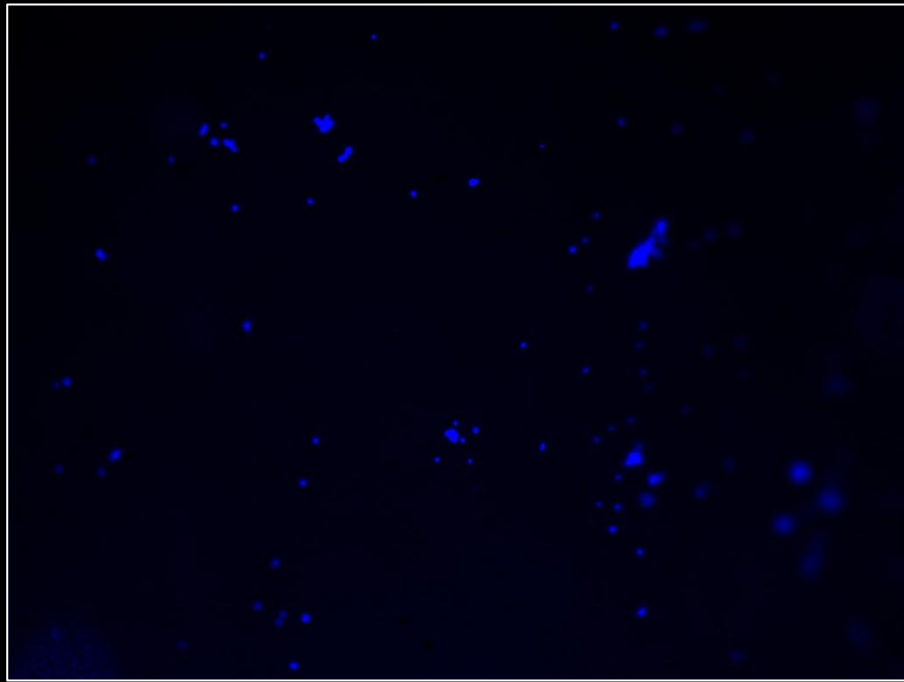
Platelet and
platelet-leukocyte complex
aggregation on the
modified polymer



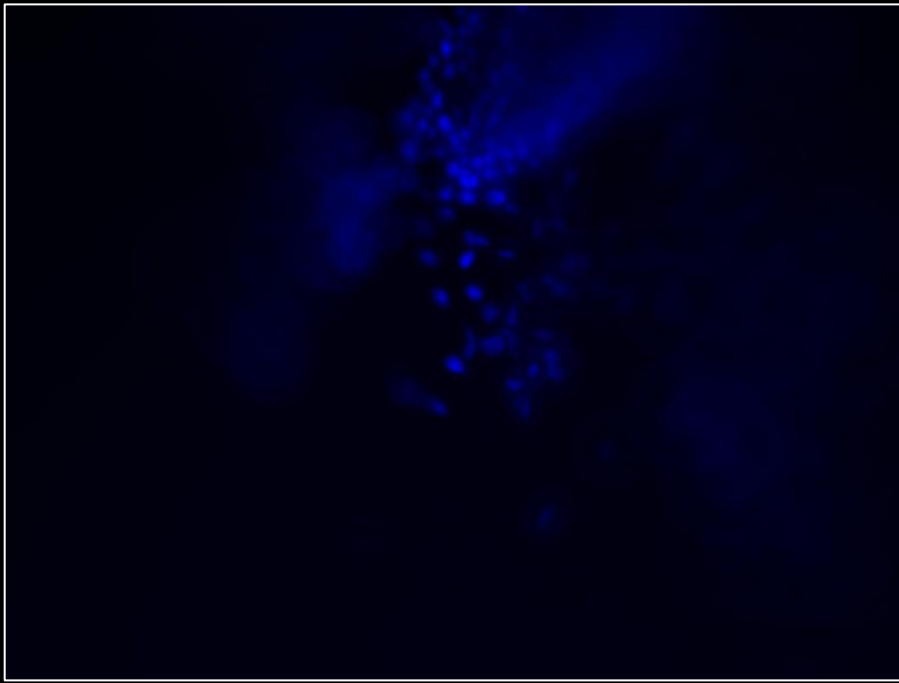
Platelet and
platelet-leukocyte complex
aggregation on the
modified polymer



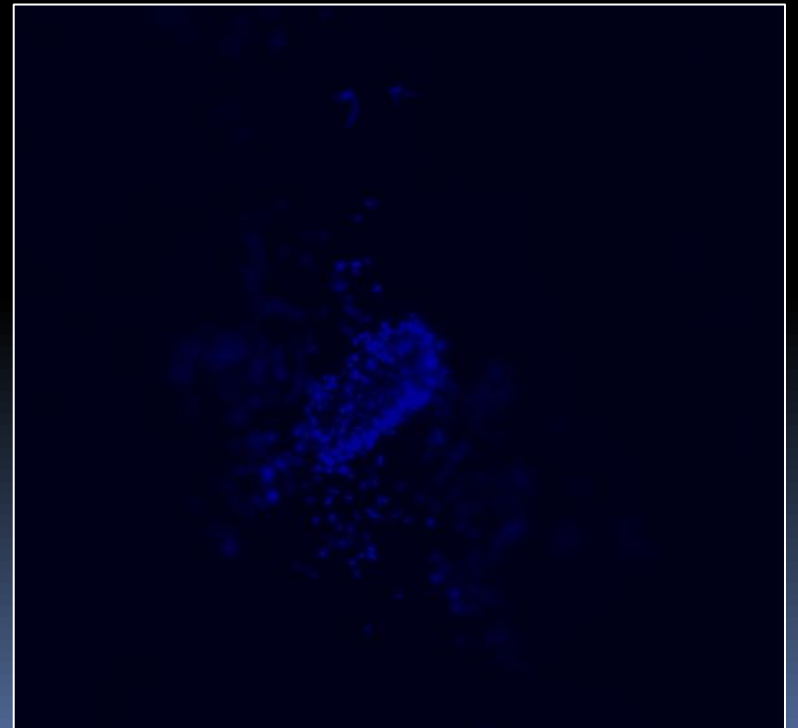
Cell adhesion on the
DC-008 5 polymer
in the bioreactor test.

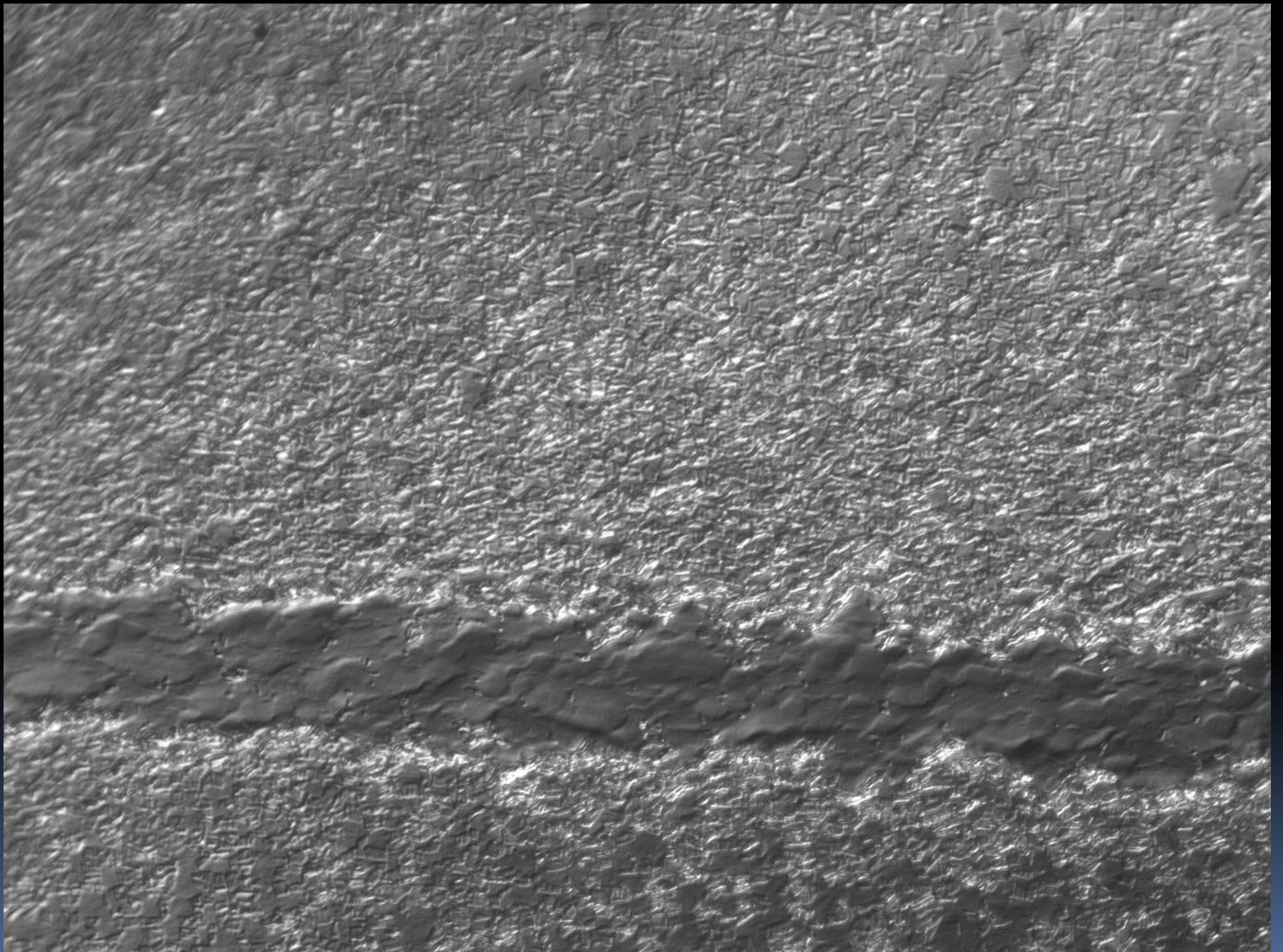


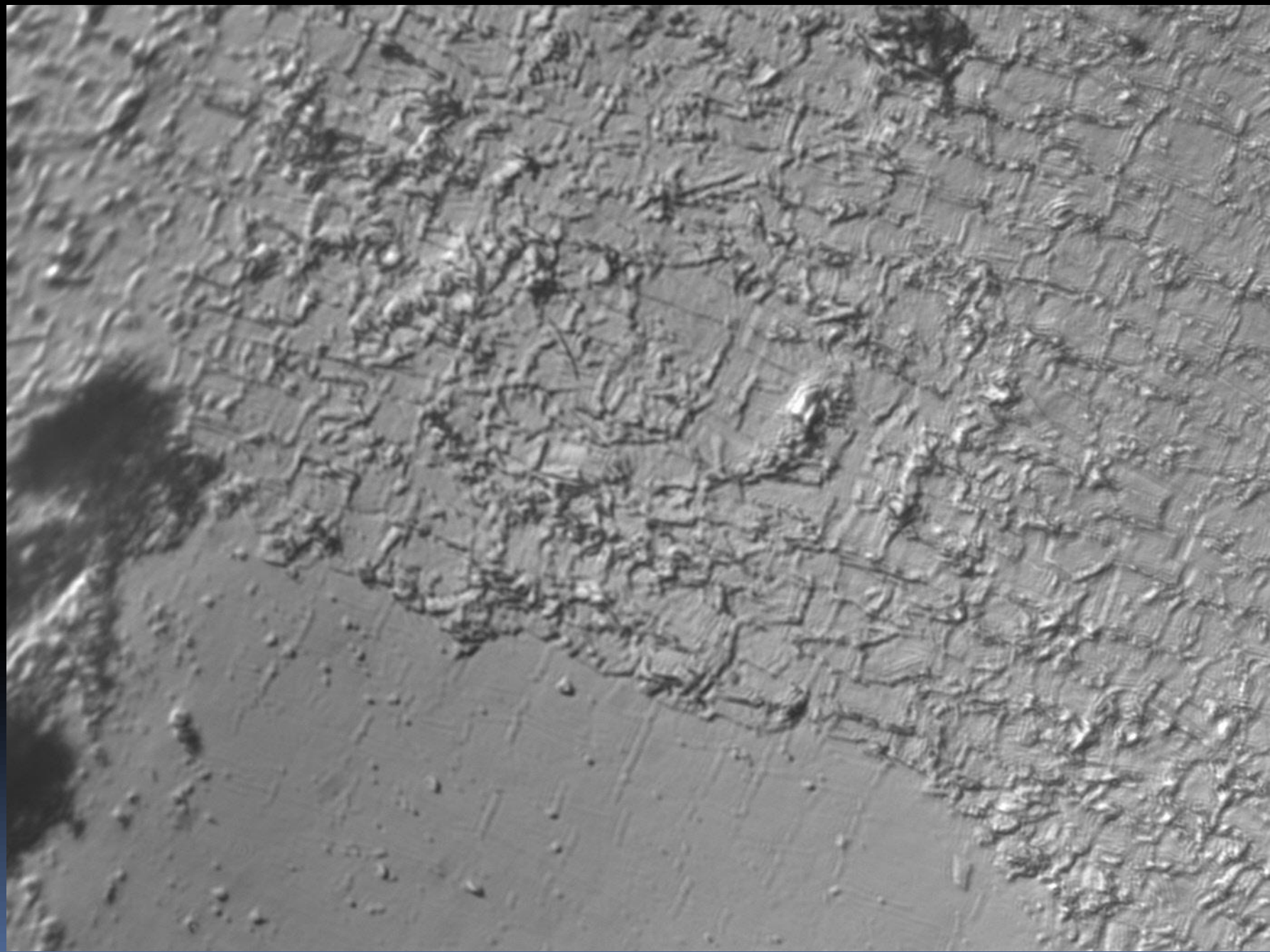
Cell adhesion on the
DC-008 4 polymer
in the bioreactor test.

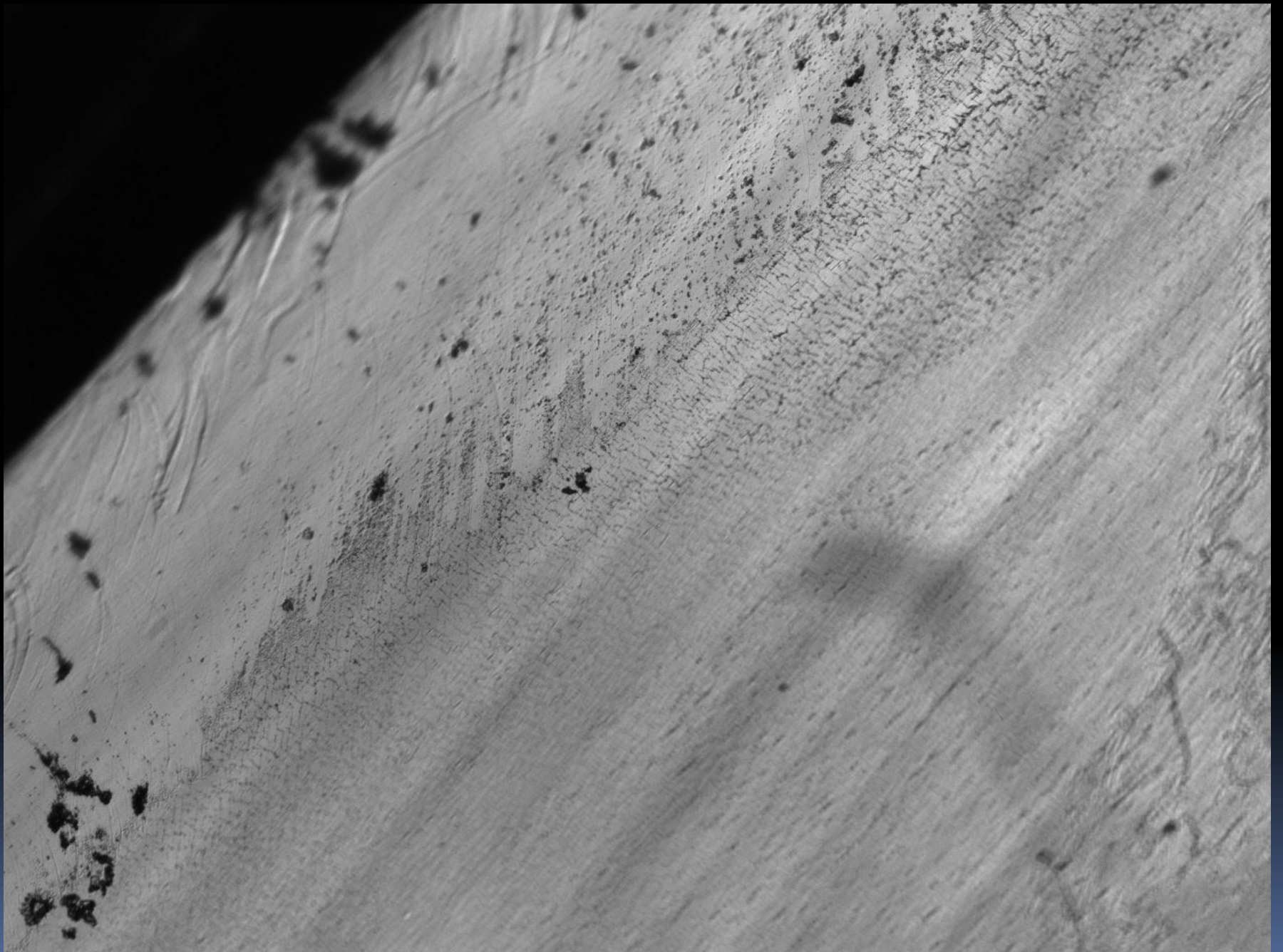


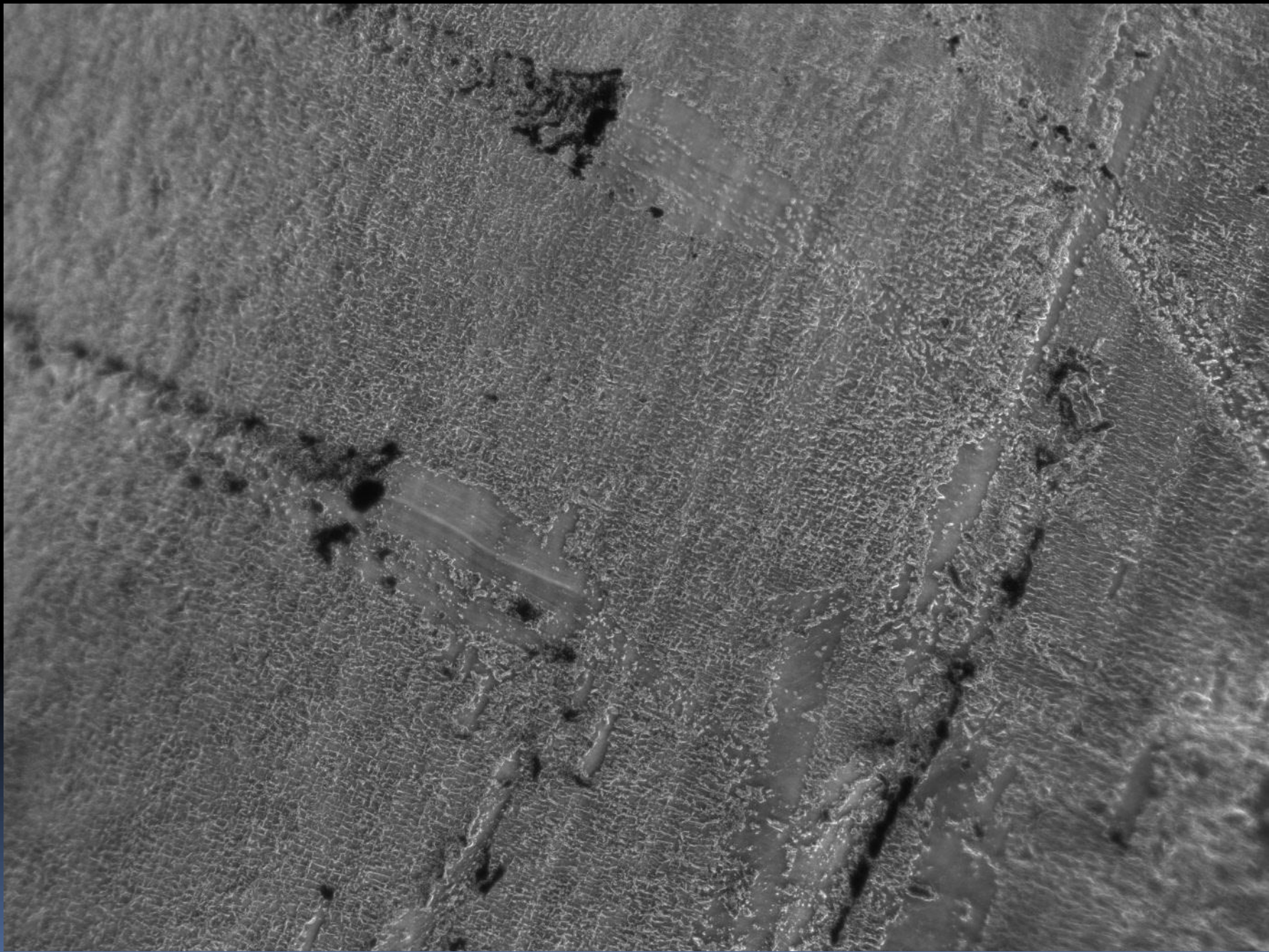
Cell adhesion on the
DC-008 6 polymer
in the bioreactor test.



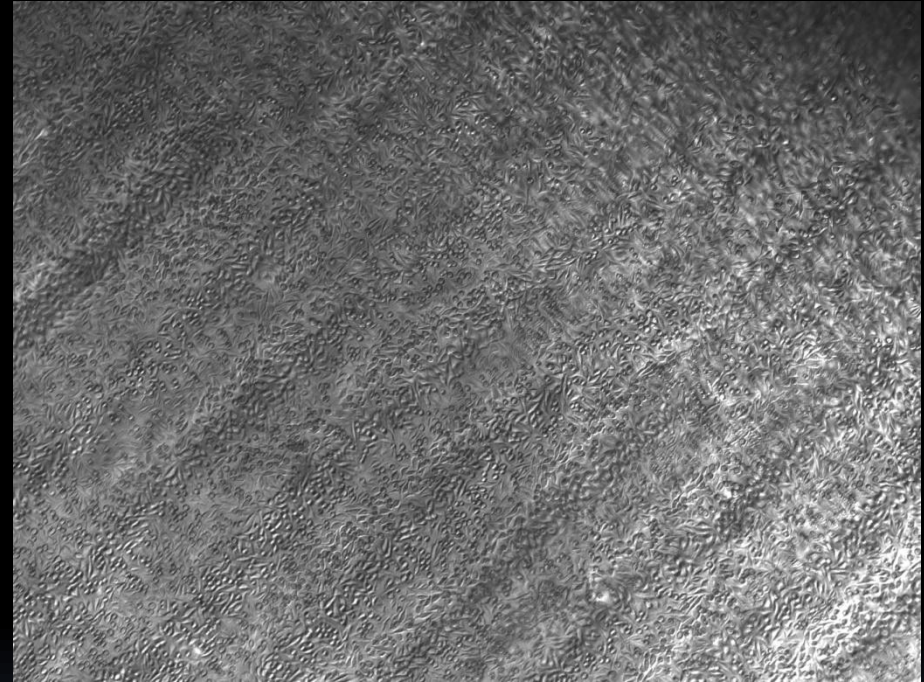
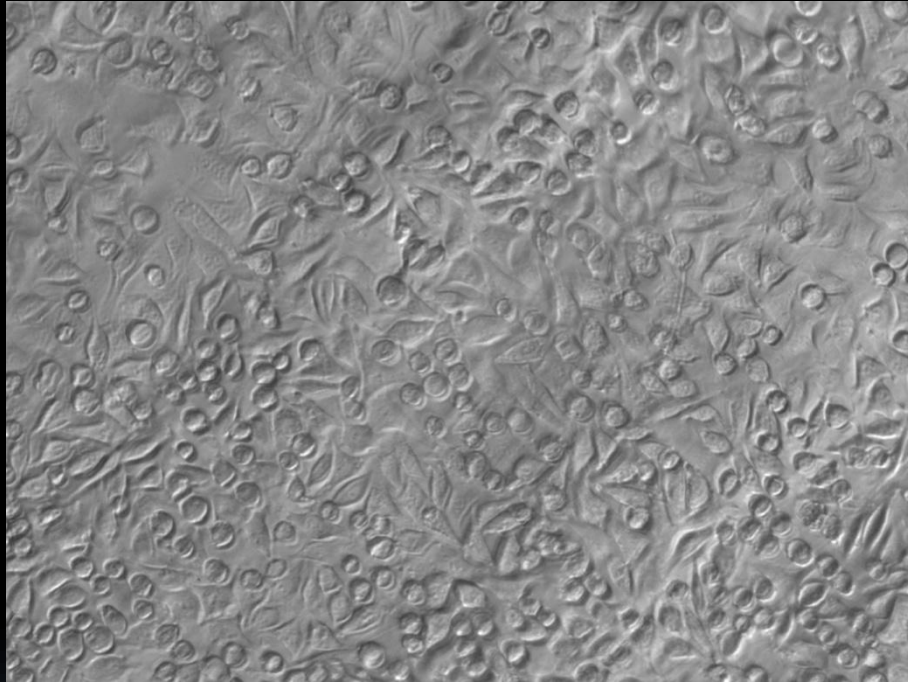




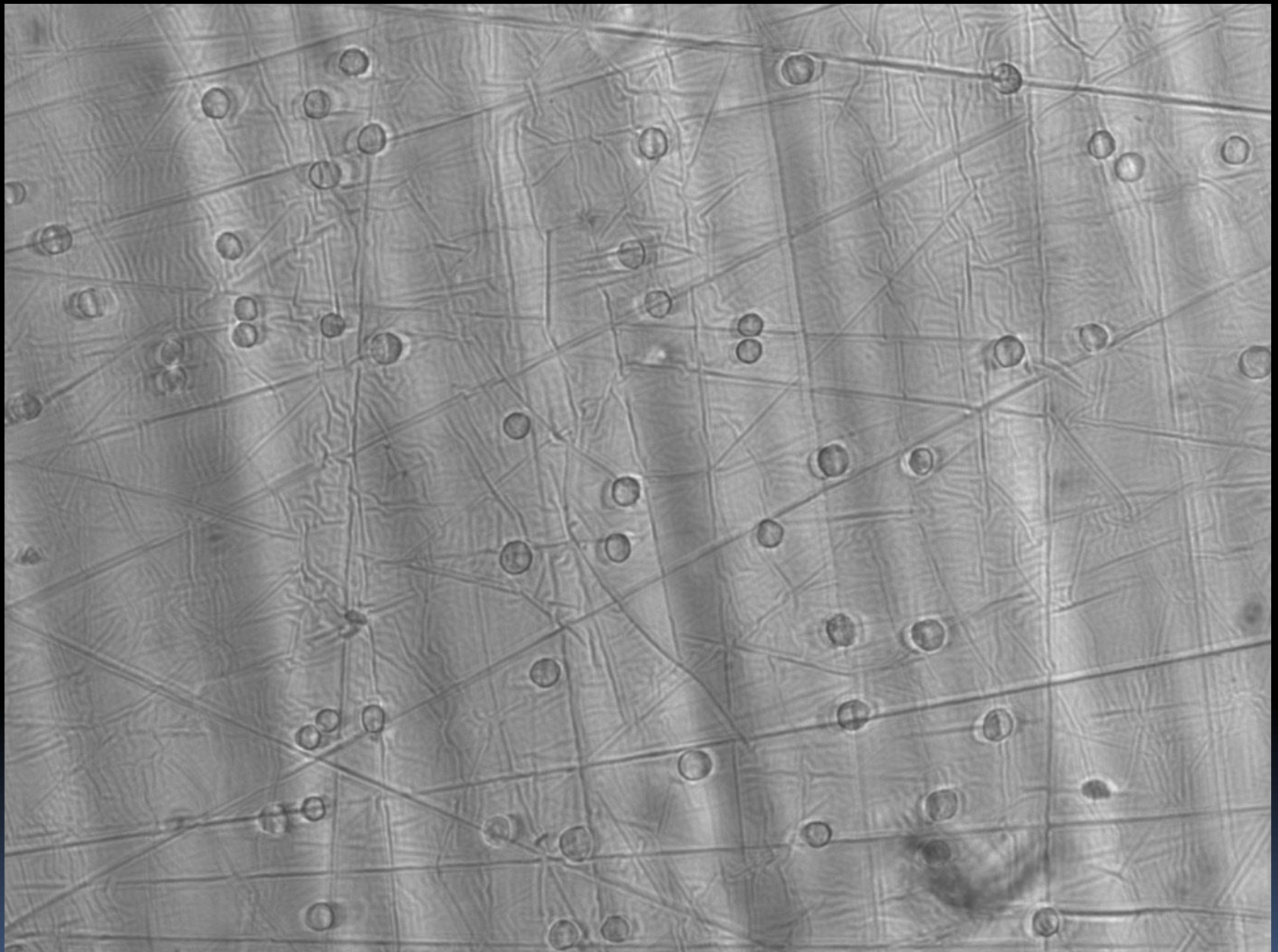




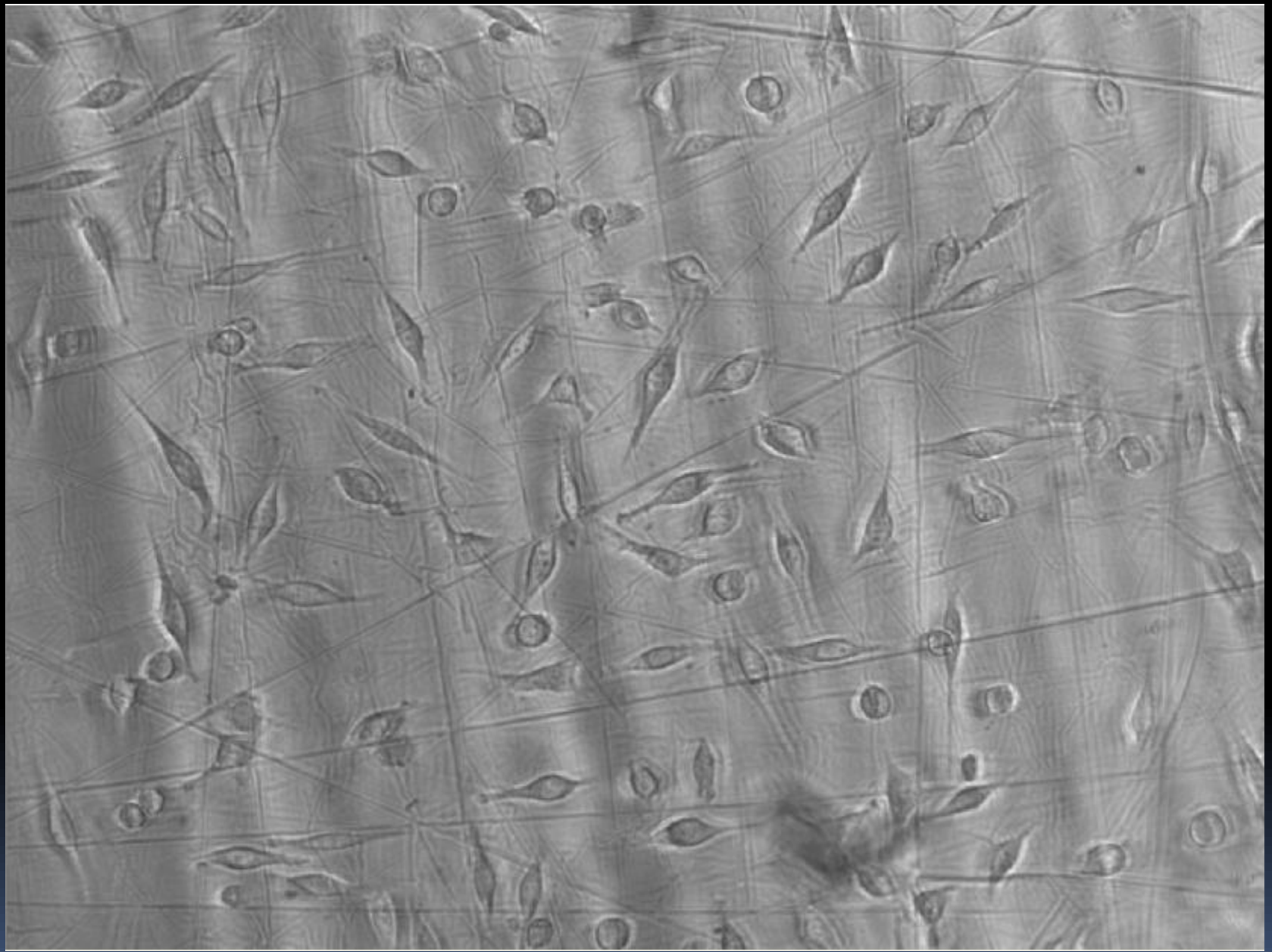
Cell adhesion test in the static condition



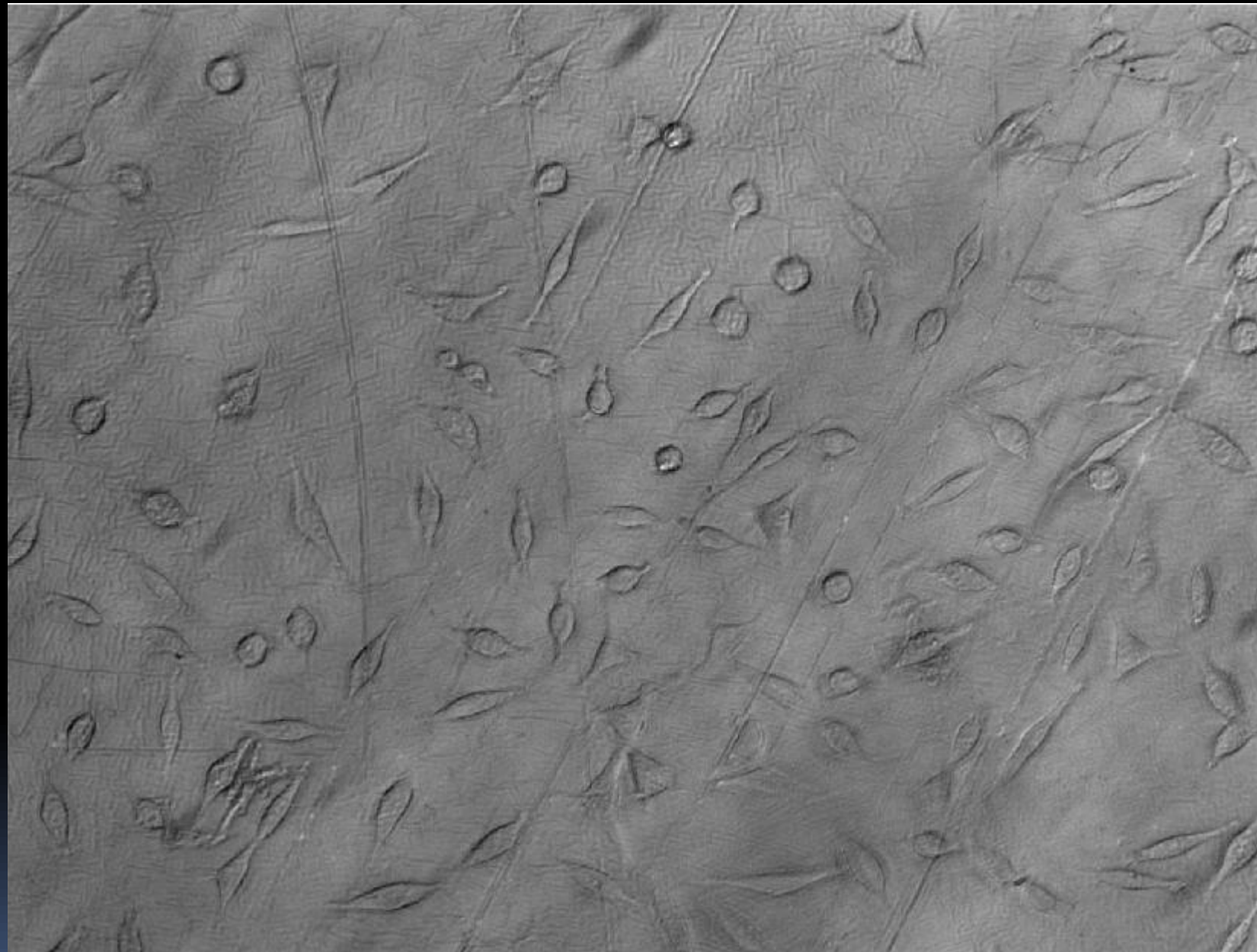
DLC (60min)



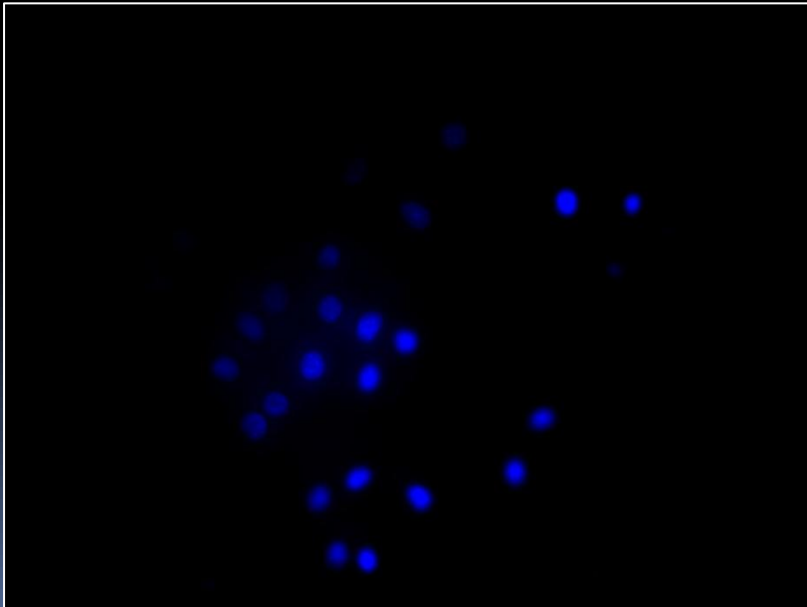
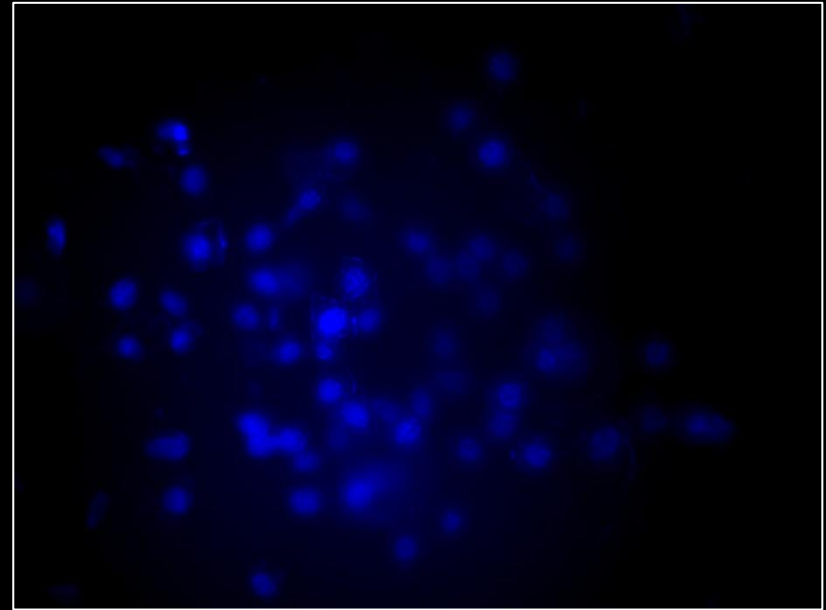
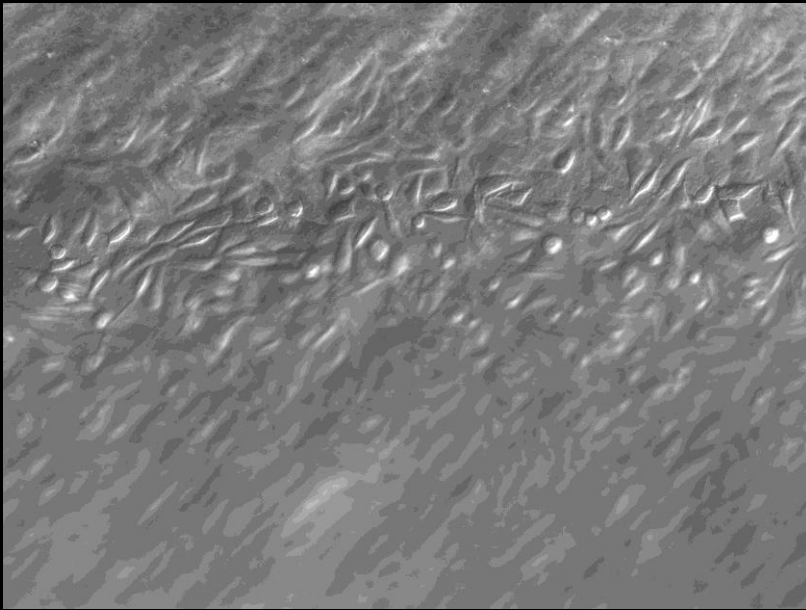
TiN (60 min)



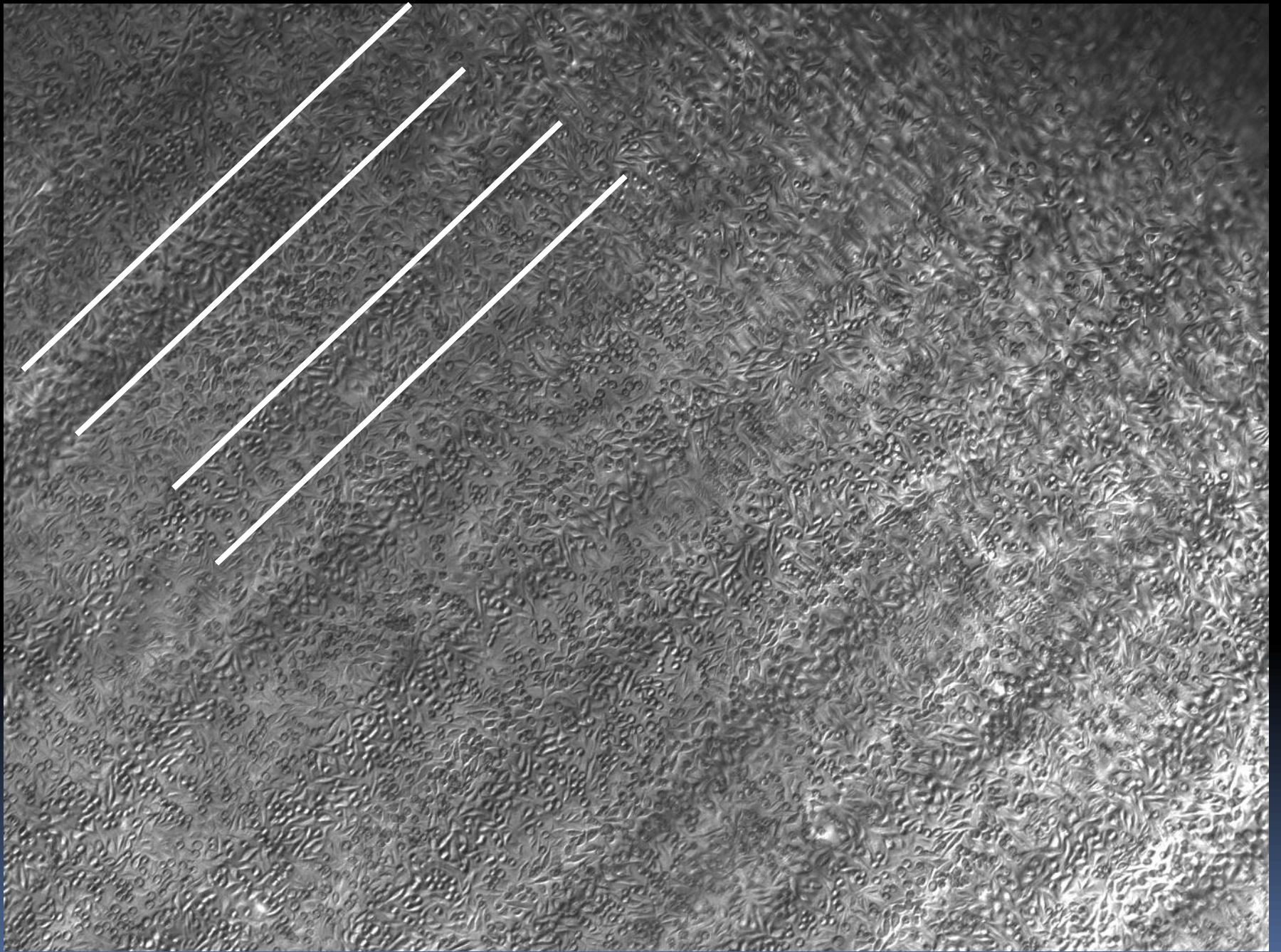
TiN (24h)



TiO (24h)



VALVE COVERED WITH
POLYELECTROLITE
AND SEEDED WITH CELLS.
(Observation after 24h)



Science Redesigns the Human Body

