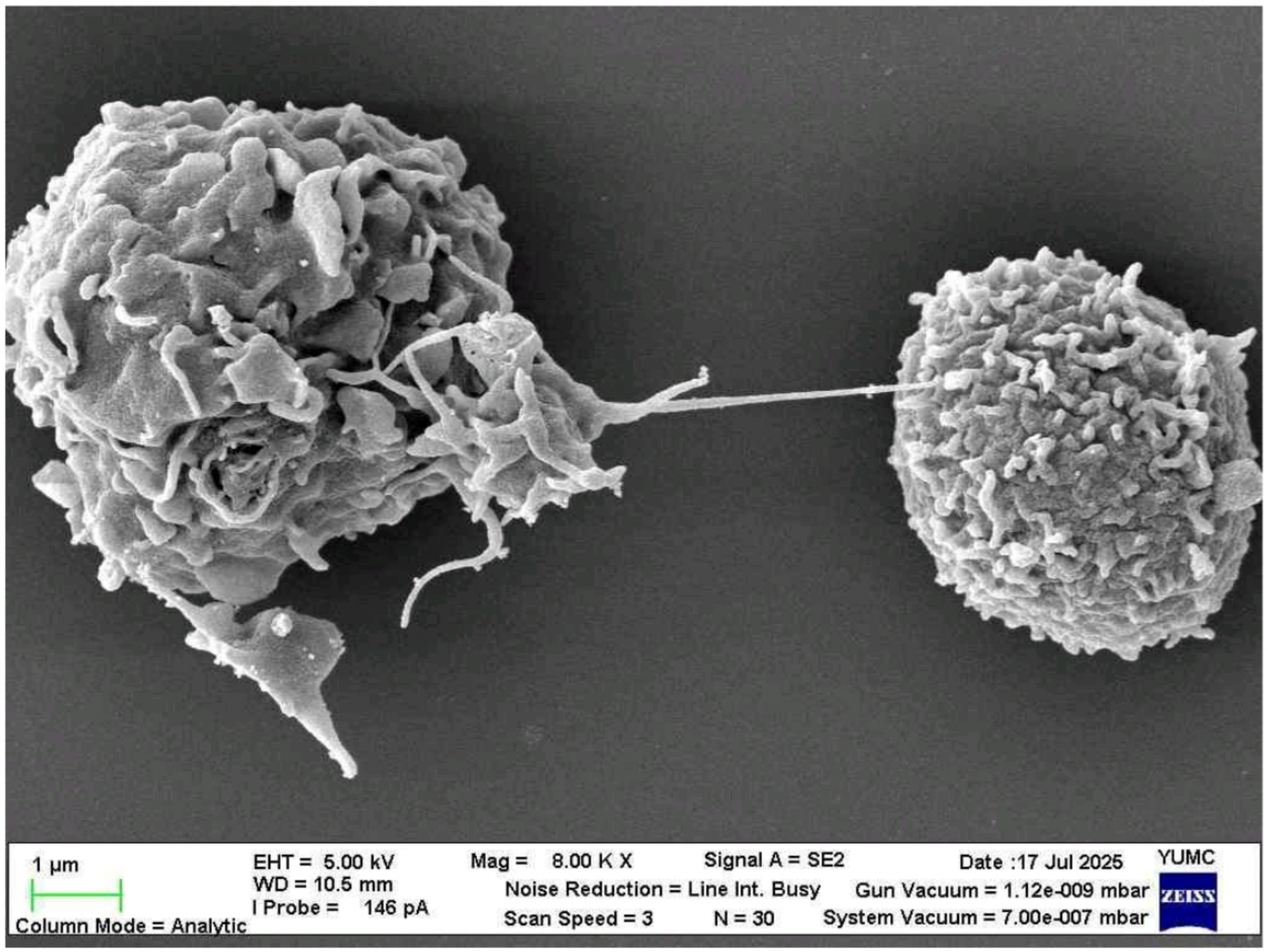
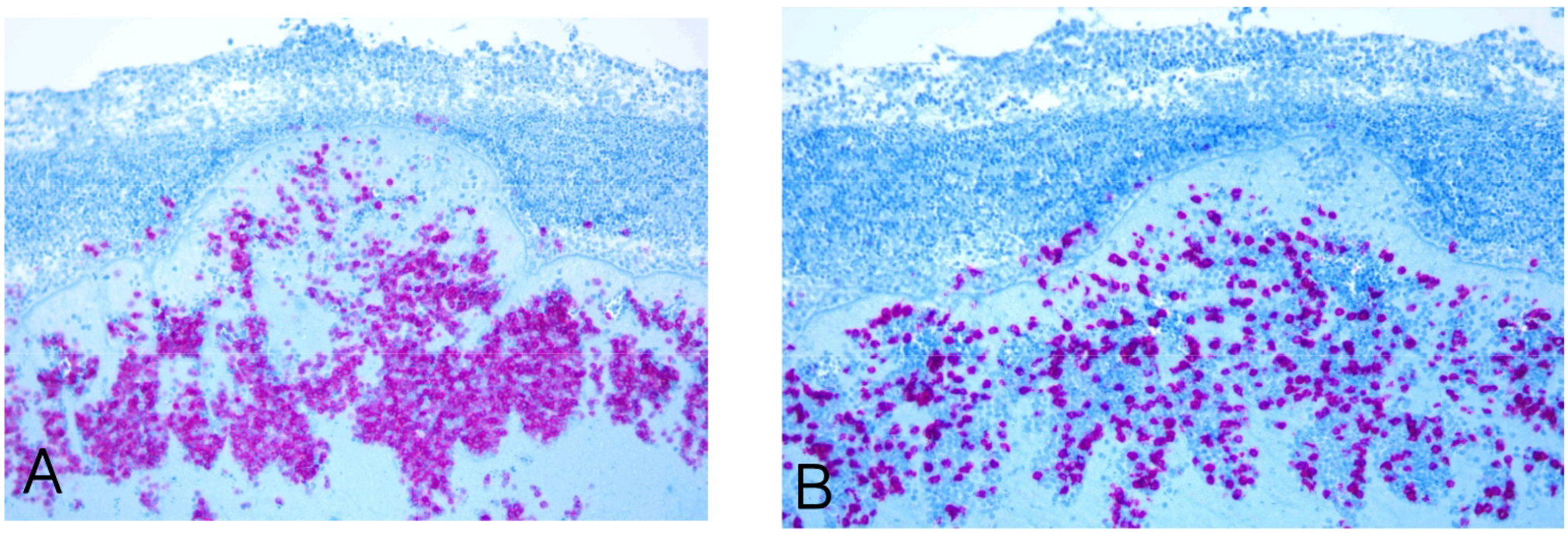
5.0 검증 패널 3: 백혈구 활성화 (Leukocyte / Buffy Coat Activation)

사용자의 요구(모든 버피코트 활성화)는 L-PRP(백혈구-풍부 PRF) 또는 BMAC에 포함된 백혈구(Leukocytes: 단핵구, 림프구, 호중구)가 물리적 스트레스에 의해 활성화됨을 증명해야 함을 의미한다.



Scanning electron micrograph of a white blood cell (WBC) and platelets

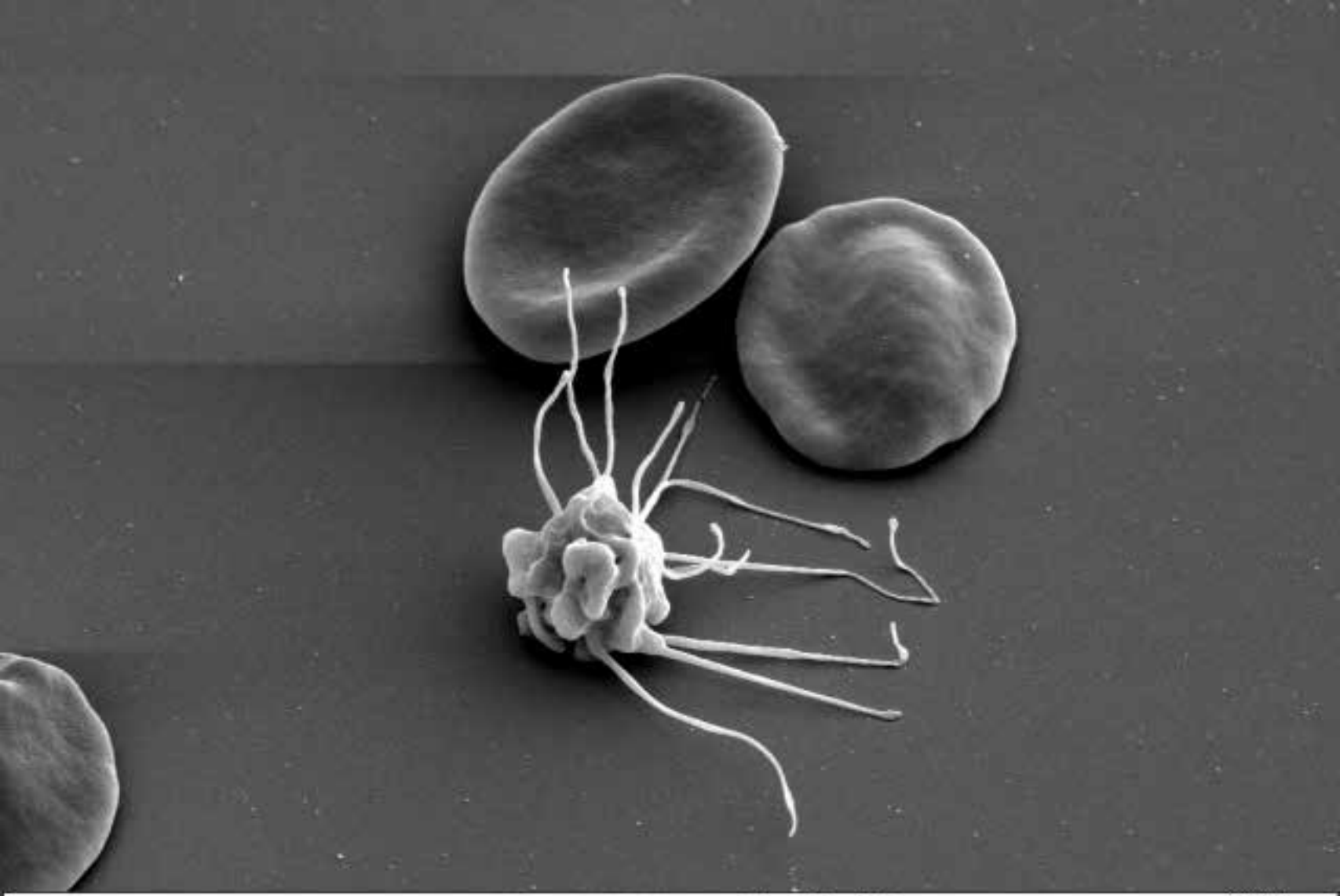


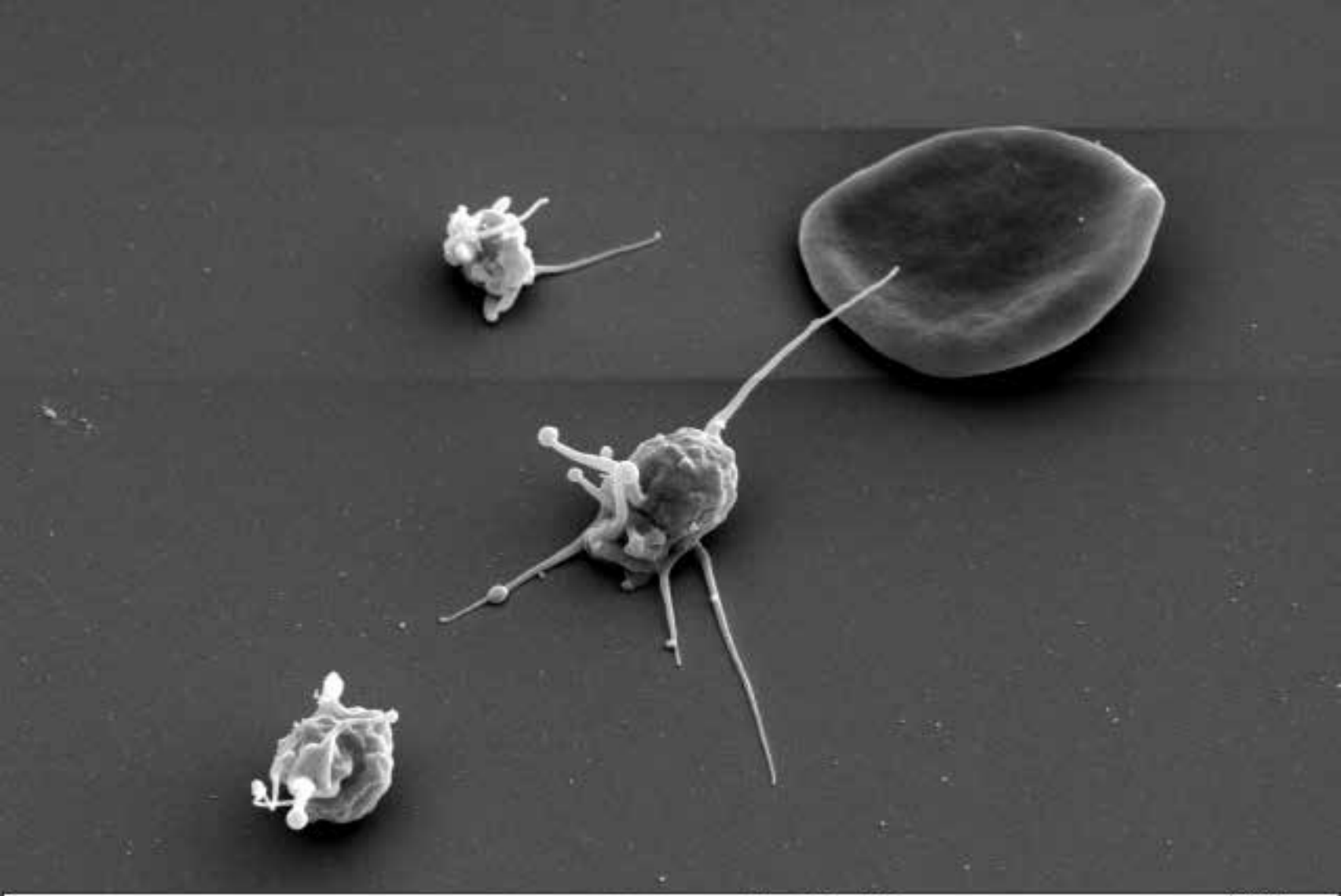
Immunohistochemistry showing CD3 and CD20 expression within the fibrin matrix

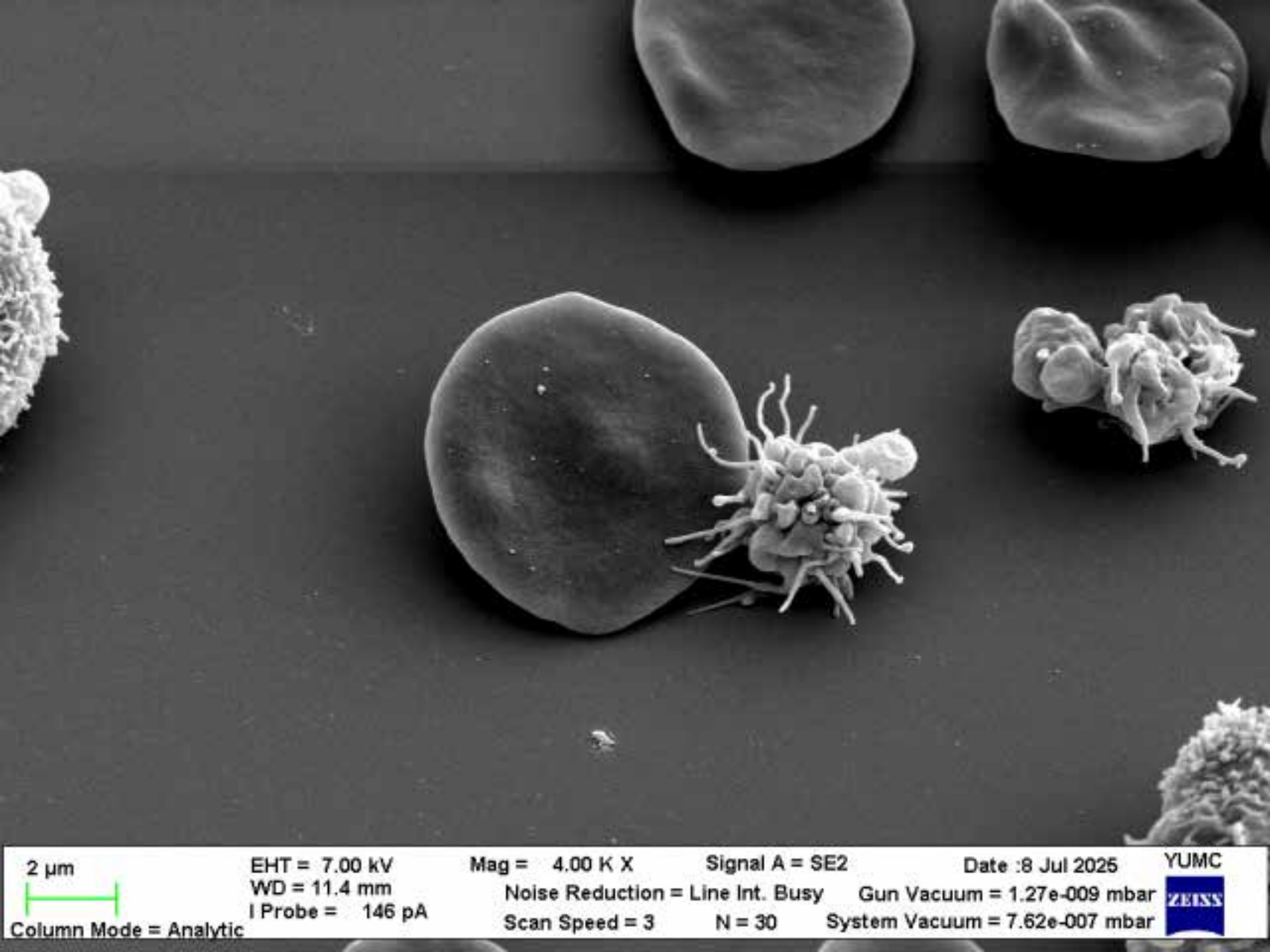
A: CD 3 T cell B: CD 20 B Cell

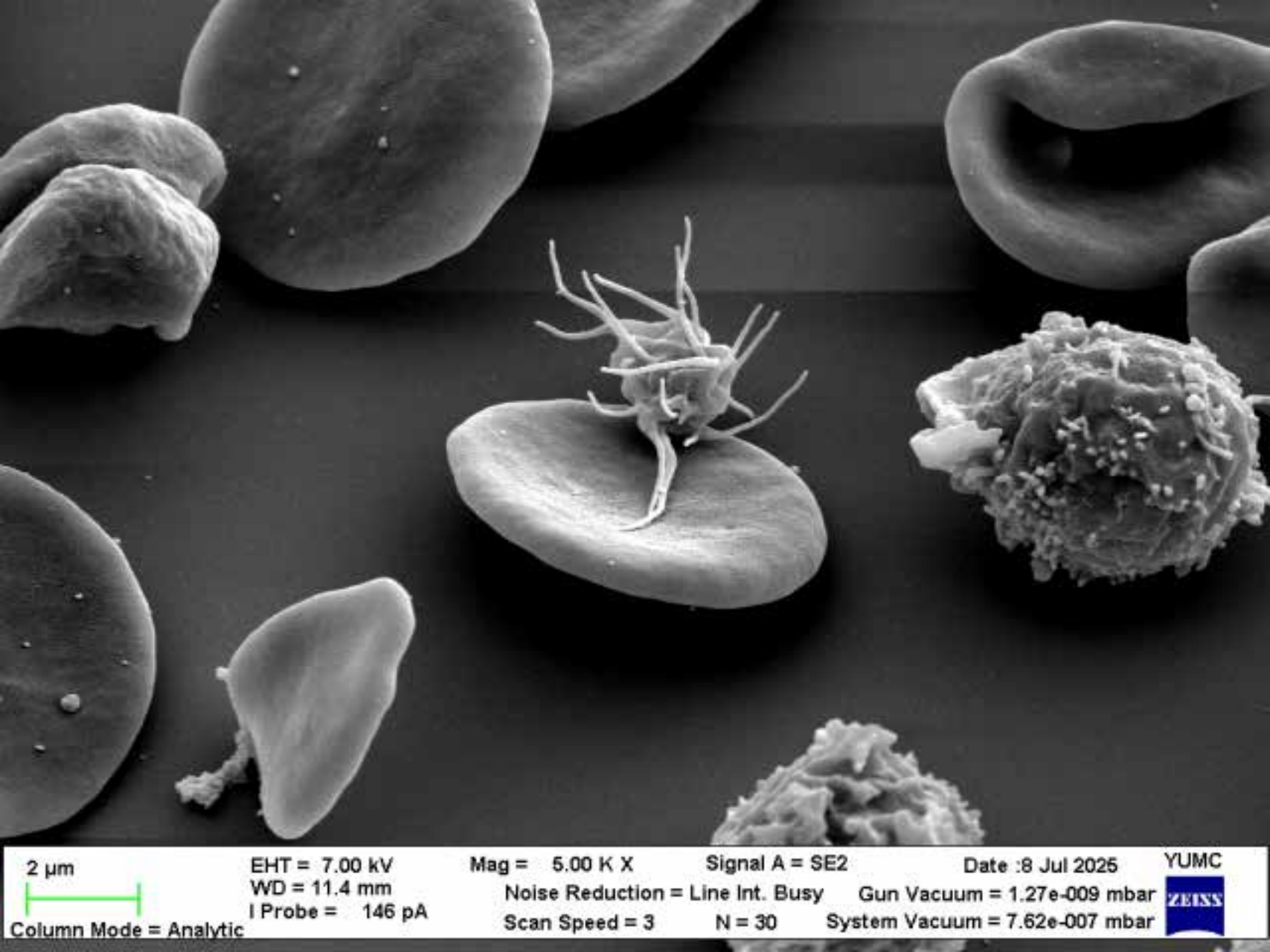
5.1 이론적 근거: 백혈구 기계 민감성 (Leukocyte Mechanosensitivity)

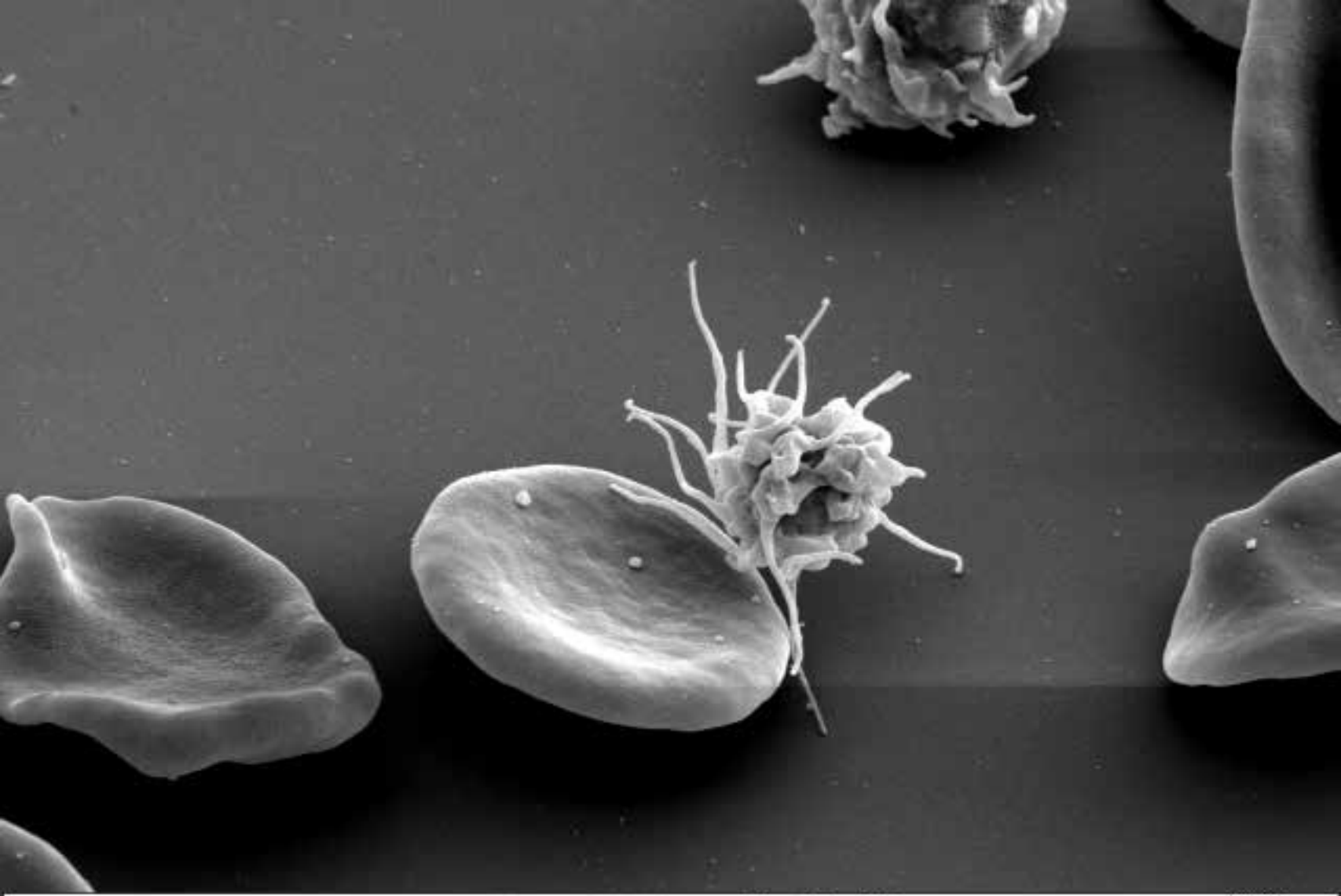
혈소판과 마찬가지로, 백혈구 역시 물리적 힘에 매우 민감한 세포이다.

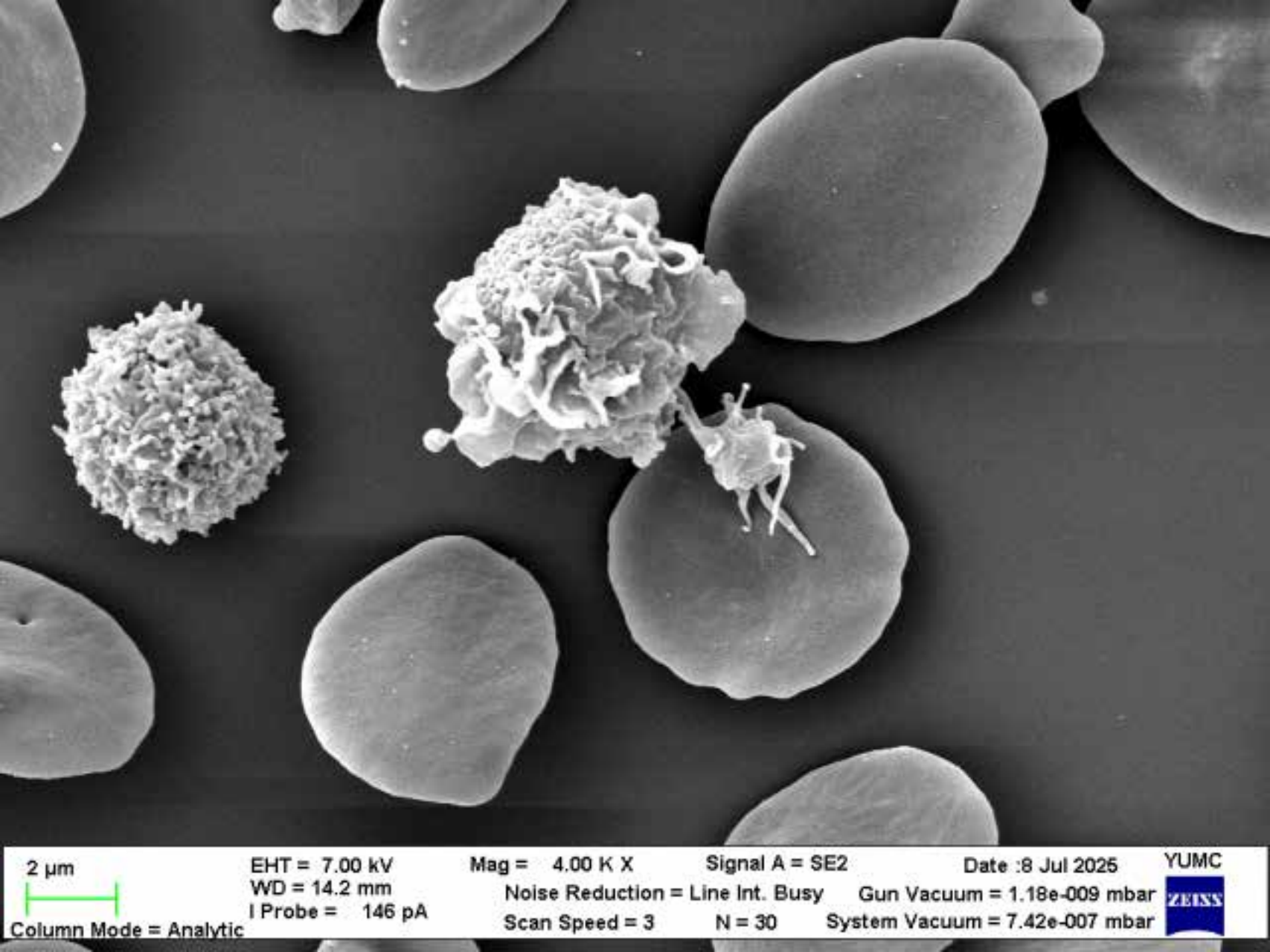

2 µm
EHT = 7.00 kV
WD = 11.4 mm
I Probe = 146 pA
Column Mode = Analytic
Mag = 4.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
Gun Vacuum = 1.26e-009 mbar
System Vacuum = 7.59e-007 mbar
YUMC
ZEISS

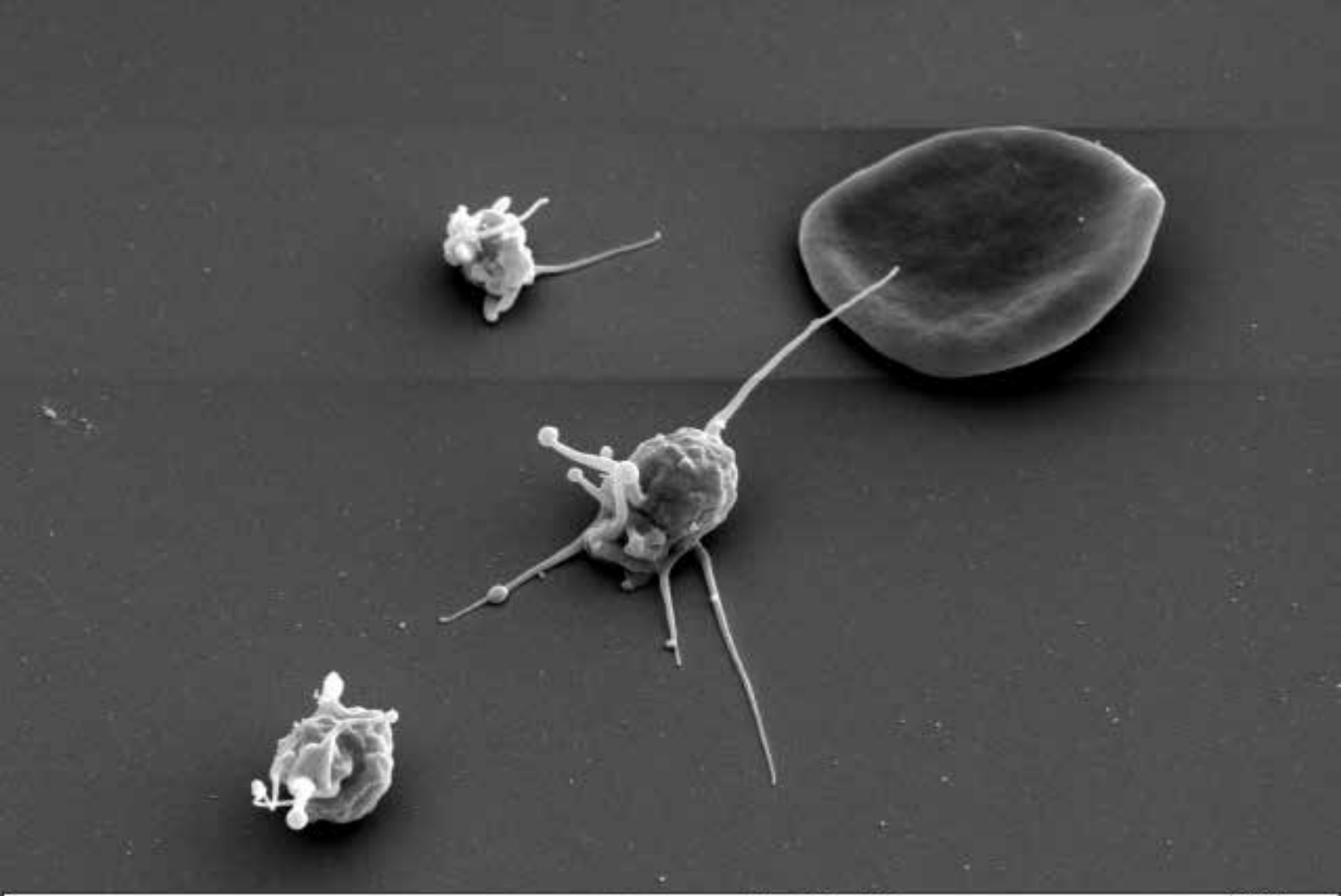

2 µm
EHT = 7.00 kV
WD = 11.4 mm
I Probe = 146 pA
Mag = 4.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
YUMC
Gun Vacuum = 1.28e-009 mbar
System Vacuum = 7.61e-007 mbar
ZEISS
Column Mode = Analytic

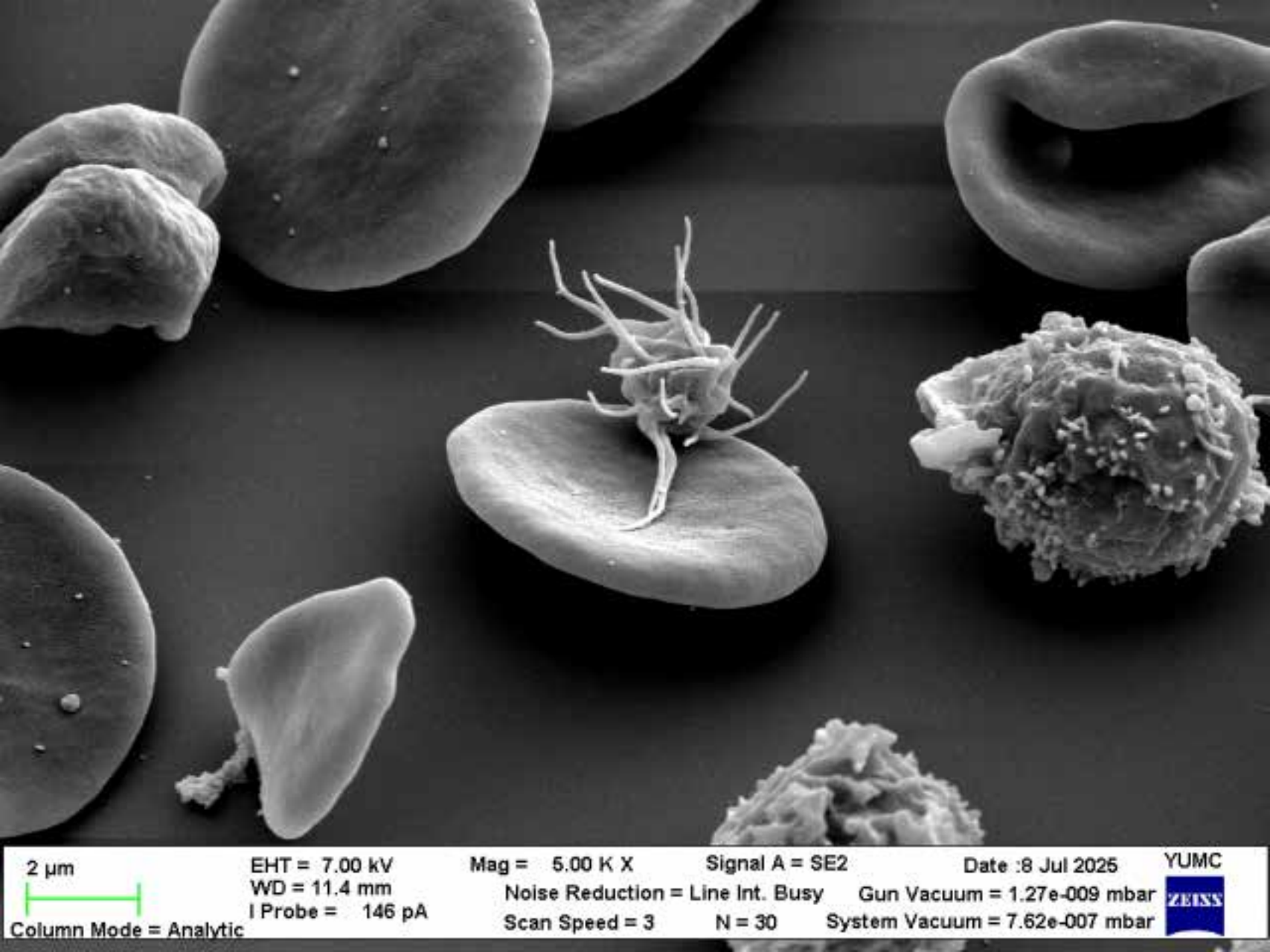

2 µm
EHT = 7.00 kV
WD = 11.4 mm
I Probe = 146 pA
Column Mode = Analytic
Mag = 4.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
YUMC
Gun Vacuum = 1.27e-009 mbar
System Vacuum = 7.62e-007 mbar
ZEISS

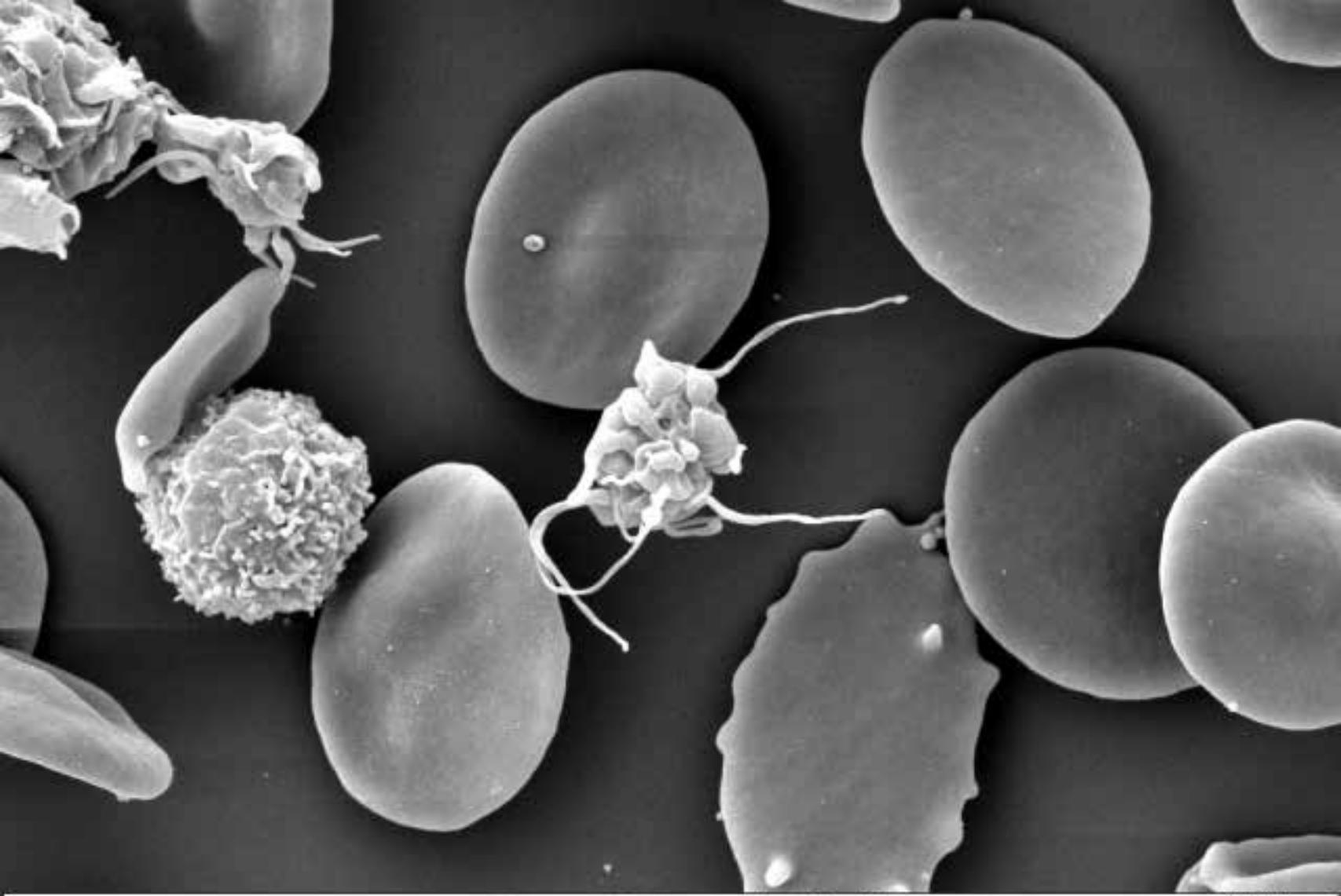

2 µm
EHT = 7.00 kV
WD = 11.4 mm
I Probe = 146 pA
Column Mode = Analytic
Mag = 5.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
YUMC
Gun Vacuum = 1.27e-009 mbar
System Vacuum = 7.62e-007 mbar
ZEISS

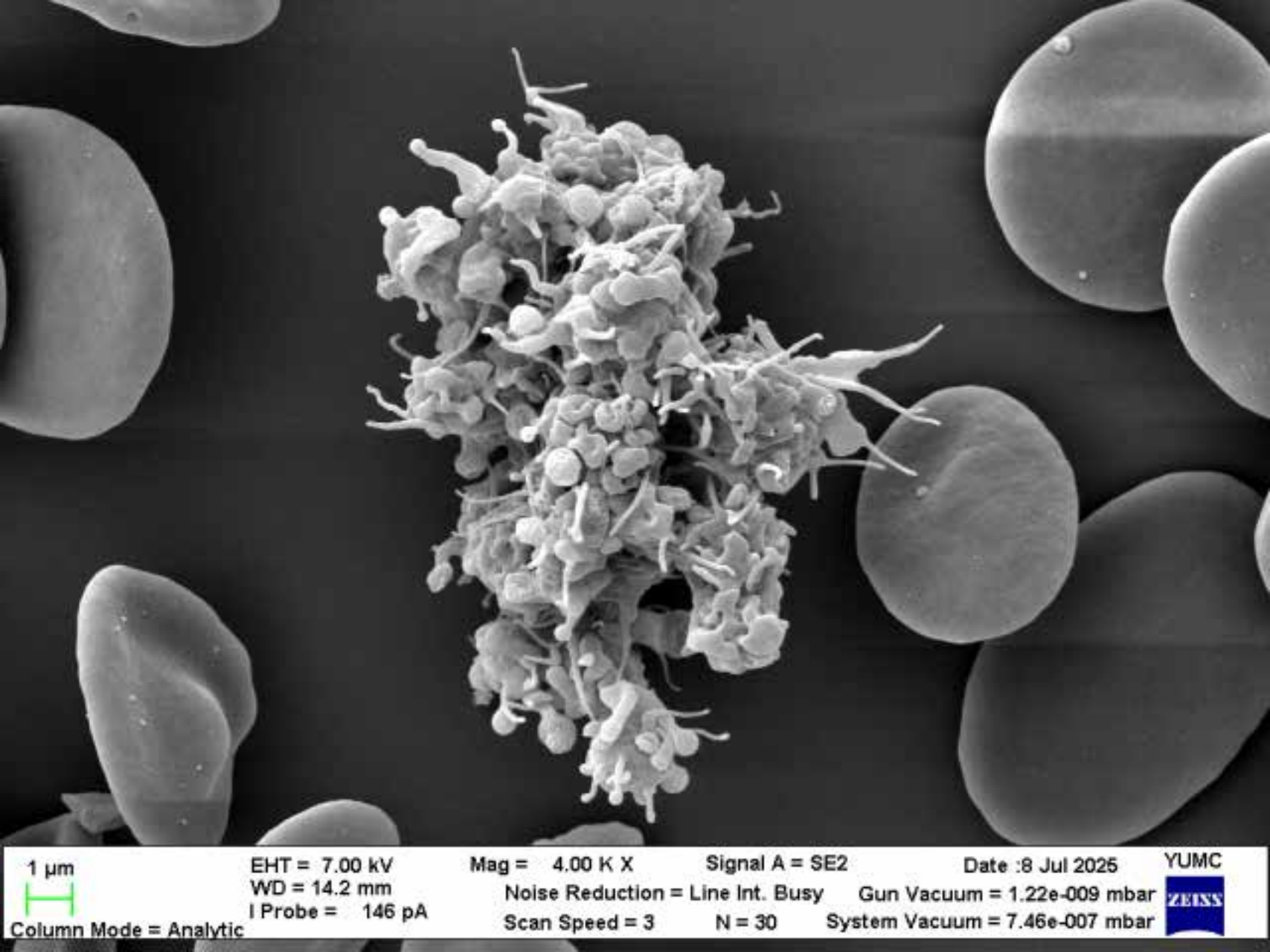

1 µm
EHT = 7.00 kV
WD = 11.4 mm
I Probe = 146 pA
Mag = 5.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
Gun Vacuum = 1.26e-009 mbar
System Vacuum = 7.56e-007 mbar
YUMC
ZEISS
Column Mode = Analytic

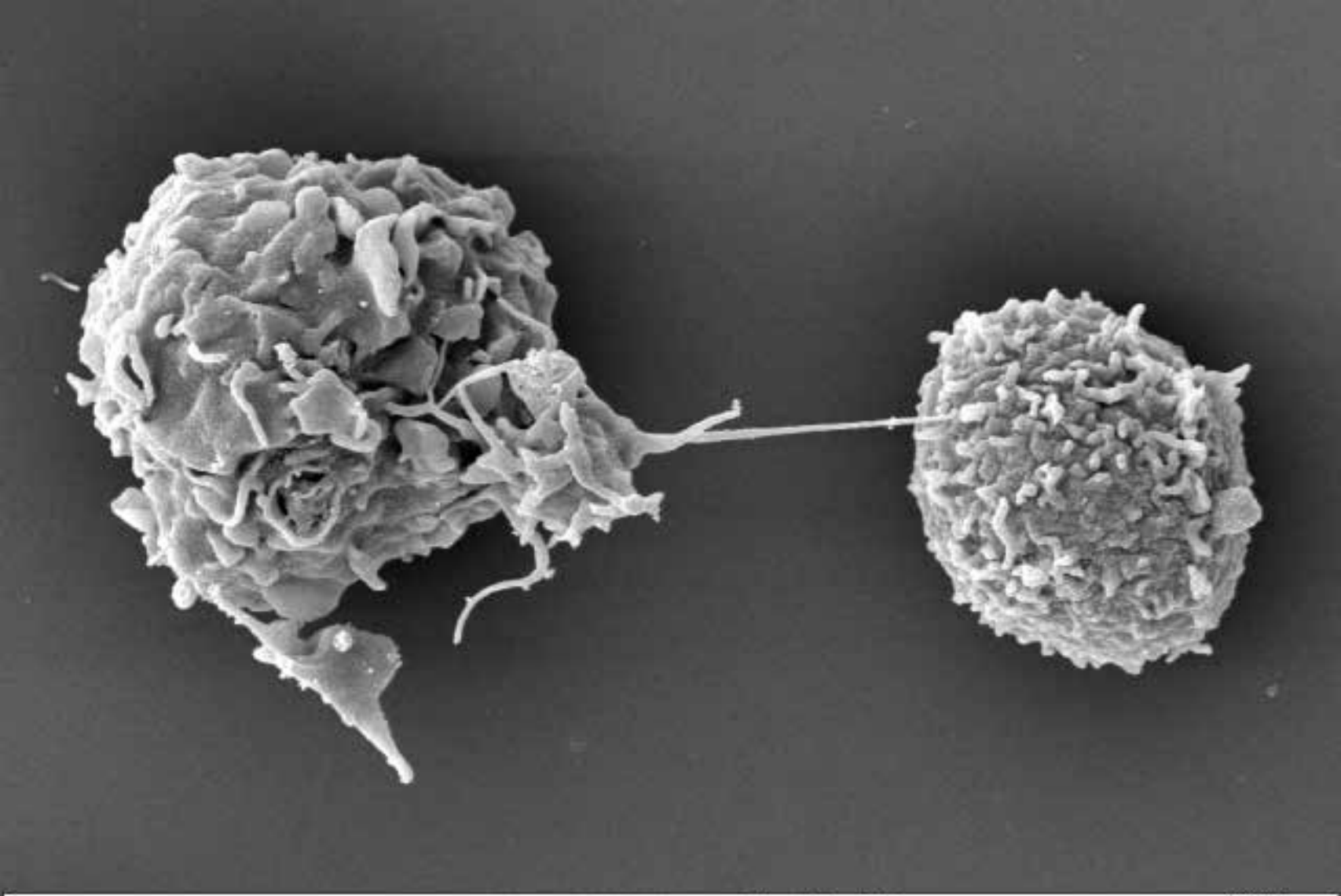

2 µm
Column Mode = Analytic
EHT = 7.00 kV
WD = 14.2 mm
I Probe = 146 pA
Mag = 4.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
Gun Vacuum = 1.18e-009 mbar
System Vacuum = 7.42e-007 mbar
YUMC
ZEISS

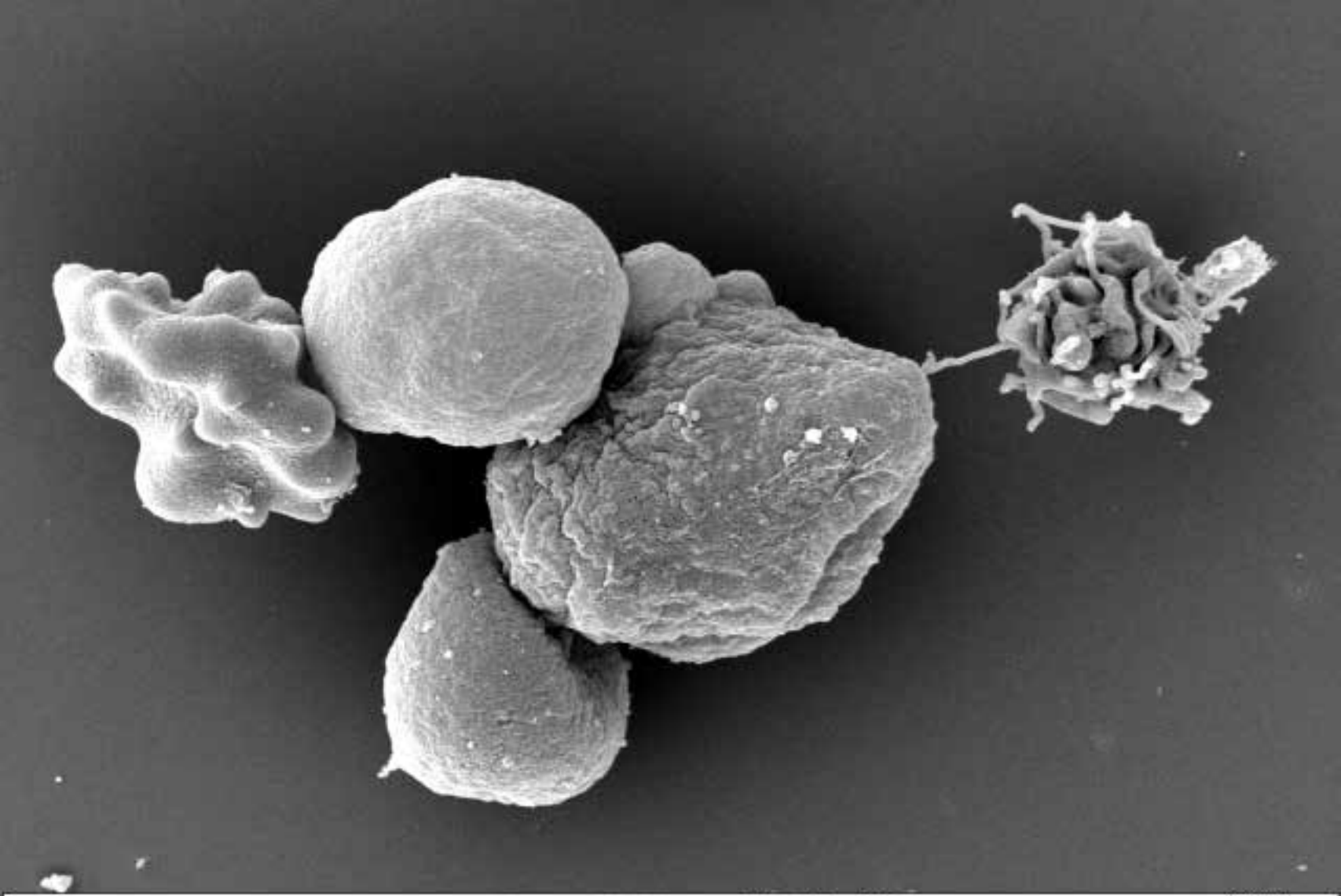

2 µm
EHT = 7.00 kV
WD = 11.4 mm
I Probe = 146 pA
Mag = 4.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
YUMC
Gun Vacuum = 1.28e-009 mbar
System Vacuum = 7.61e-007 mbar
ZEISS
Column Mode = Analytic


2 µm
EHT = 7.00 kV
WD = 11.4 mm
I Probe = 146 pA
Column Mode = Analytic
Mag = 5.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
YUMC
Gun Vacuum = 1.27e-009 mbar
System Vacuum = 7.62e-007 mbar
ZEISS


2 µm
EHT = 7.00 kV
WD = 14.2 mm
I Probe = 146 pA
Column Mode = Analytic
Mag = 4.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
YUMC
Gun Vacuum = 1.25e-009 mbar
System Vacuum = 7.53e-007 mbar
ZEISS


1 µm
EHT = 7.00 kV
WD = 14.2 mm
I Probe = 146 pA
Column Mode = Analytic
Mag = 4.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :8 Jul 2025
Gun Vacuum = 1.22e-009 mbar
System Vacuum = 7.46e-007 mbar
YUMC
ZEISS


1 µm
EHT = 5.00 kV
WD = 10.5 mm
I Probe = 146 pA
Column Mode = Analytic
Mag = 7.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :17 Jul 2025
Gun Vacuum = 1.12e-009 mbar
System Vacuum = 7.01e-007 mbar
YUMC
ZEISS


1 µm
EHT = 5.00 kV
WD = 10.5 mm
I Probe = 146 pA
Mag = 6.00 K X
Signal A = SE2
Noise Reduction = Line Int. Busy
Scan Speed = 3
N = 30
Date :17 Jul 2025
Gun Vacuum = 1.13e-009 mbar
System Vacuum = 7.00e-007 mbar
YUMC
ZEISS
Column Mode = Analytic