



組織工程實驗室

Tissue Engineering Laboratory

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研究方向: 組織工程、醫用高分子材料、醫用水膠、再生醫學

IVD Regeneration

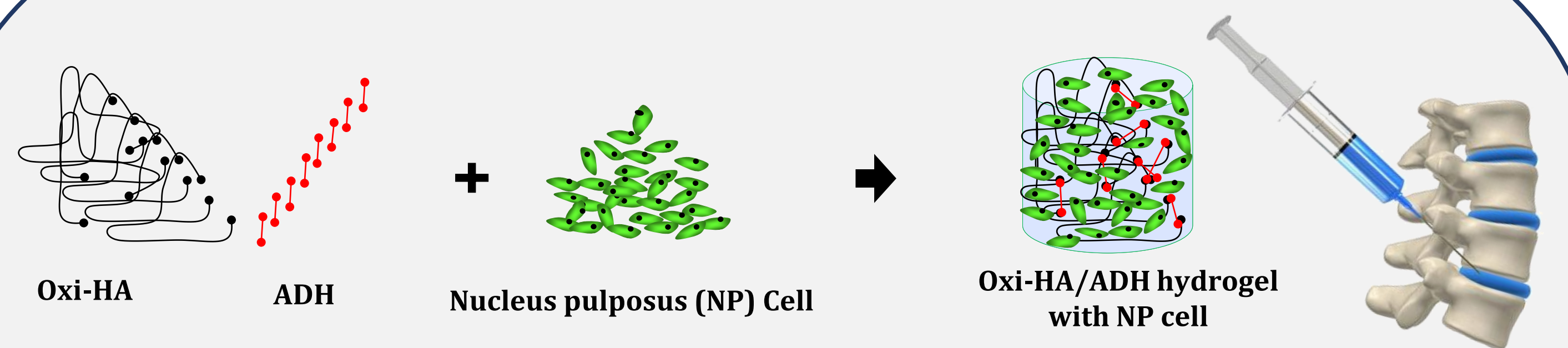
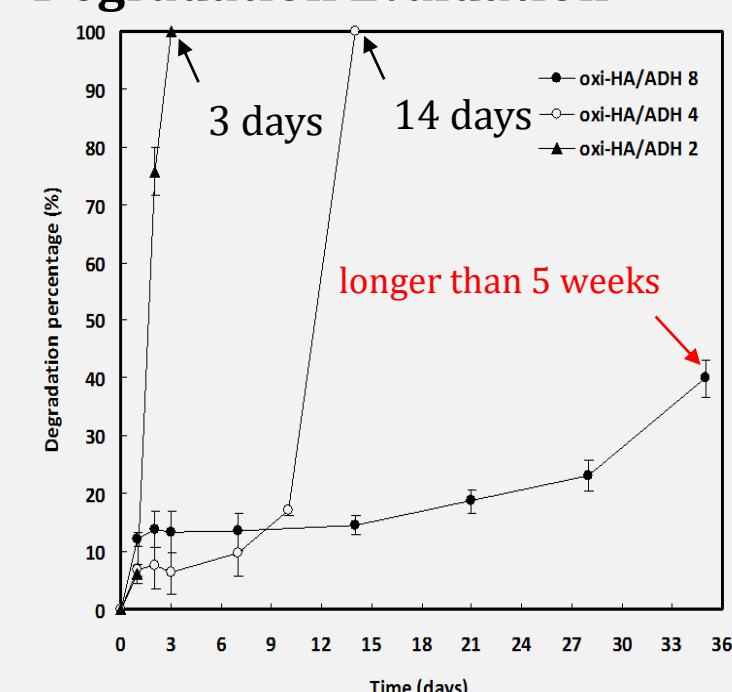
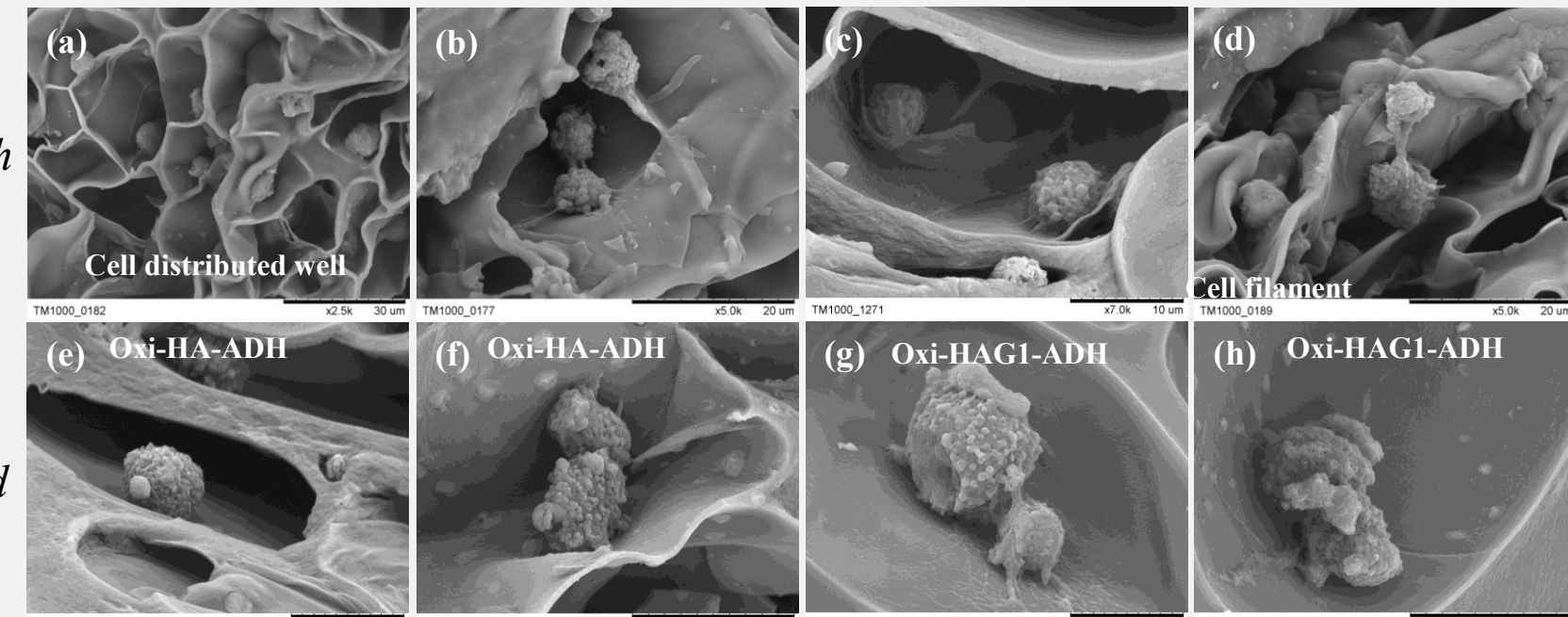


Table 1. Rheological properties of oxi-HA/ADH hydrogel				
Sample	Gelling time (sec)		Visco-elastic properties	
	4°C	37°C	(kPa)	(cP)
oxi-HA/ADH2	180	175	5.16	0.52
oxi-HA/ADH4	202	159	6.42	0.64
oxi-HA/ADH8	492	143	30.2	3.02

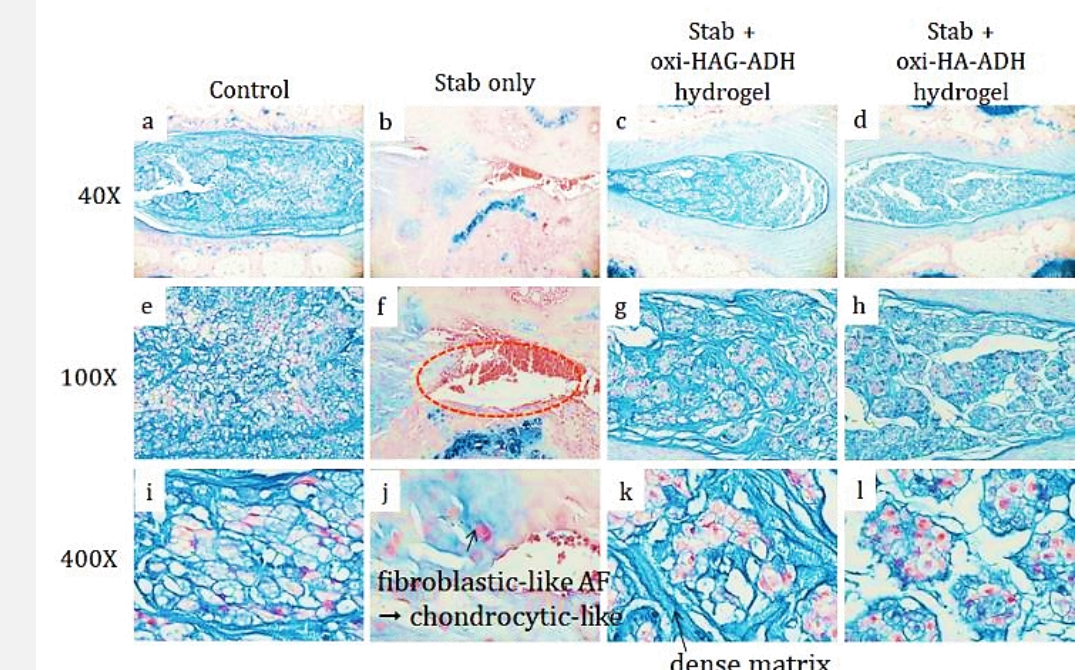
Degradation Evaluation



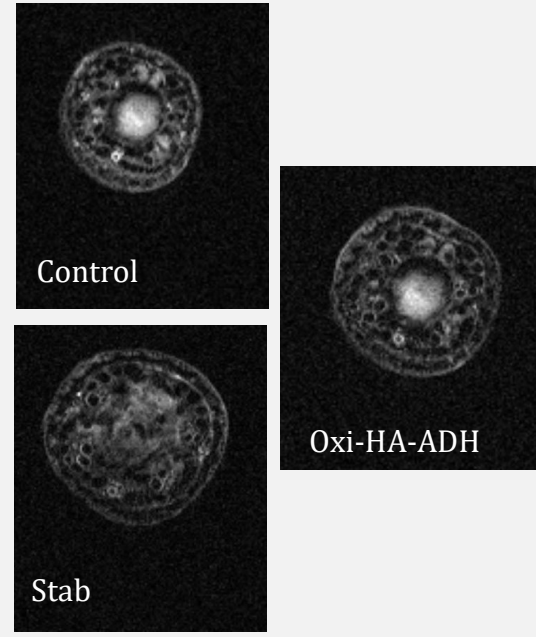
SEM Observation



Alcian Blue Staining

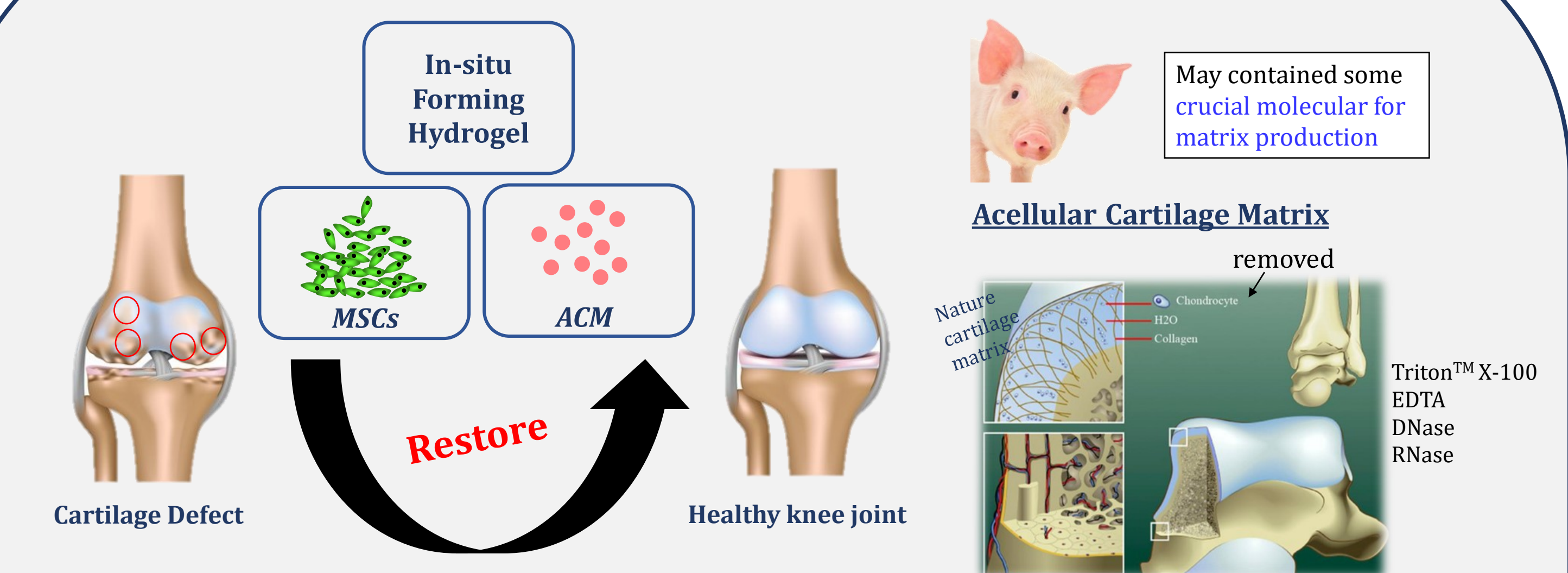


MR Image -at 6 week, after hydrogel injection

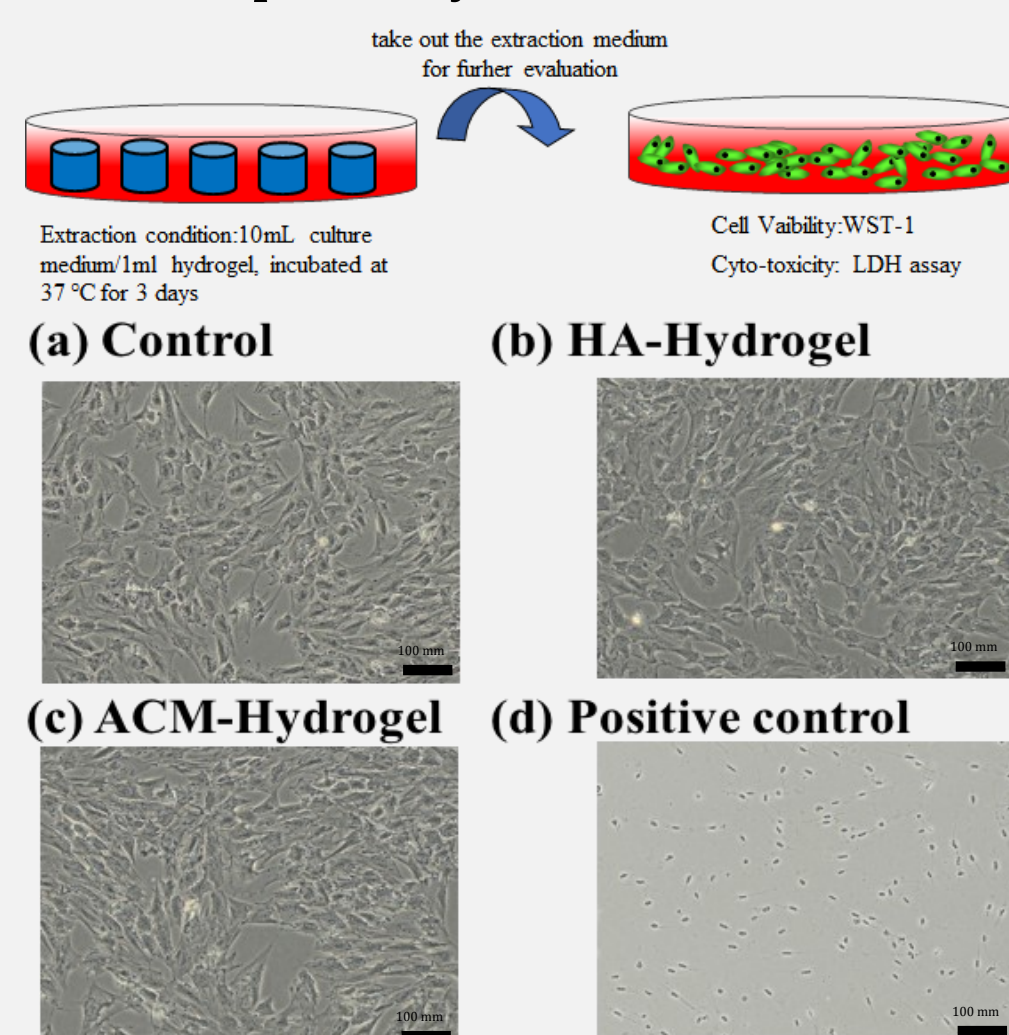


abbr. IVD: Intervertebral disc; HA: Hyaluronic acid; TE: Tissue Engineering

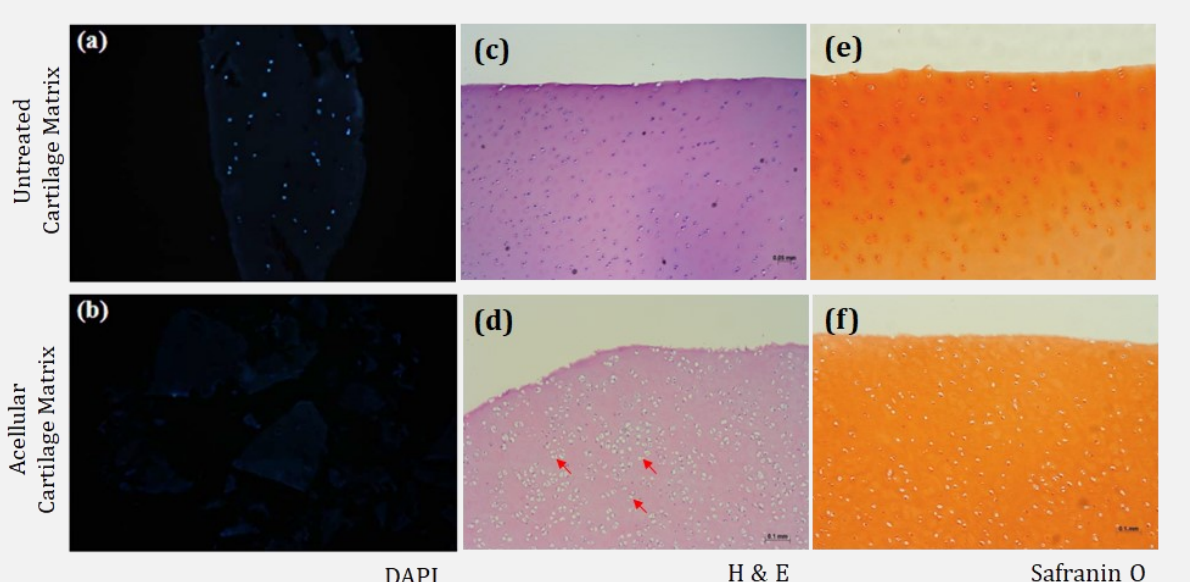
Cartilage Defect Treatment



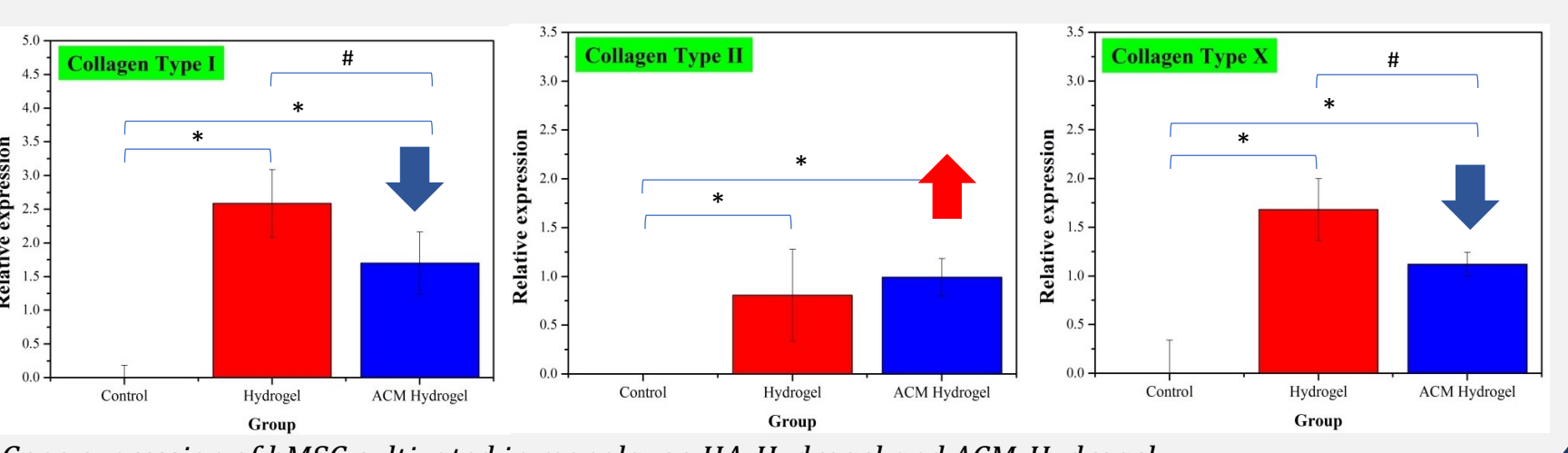
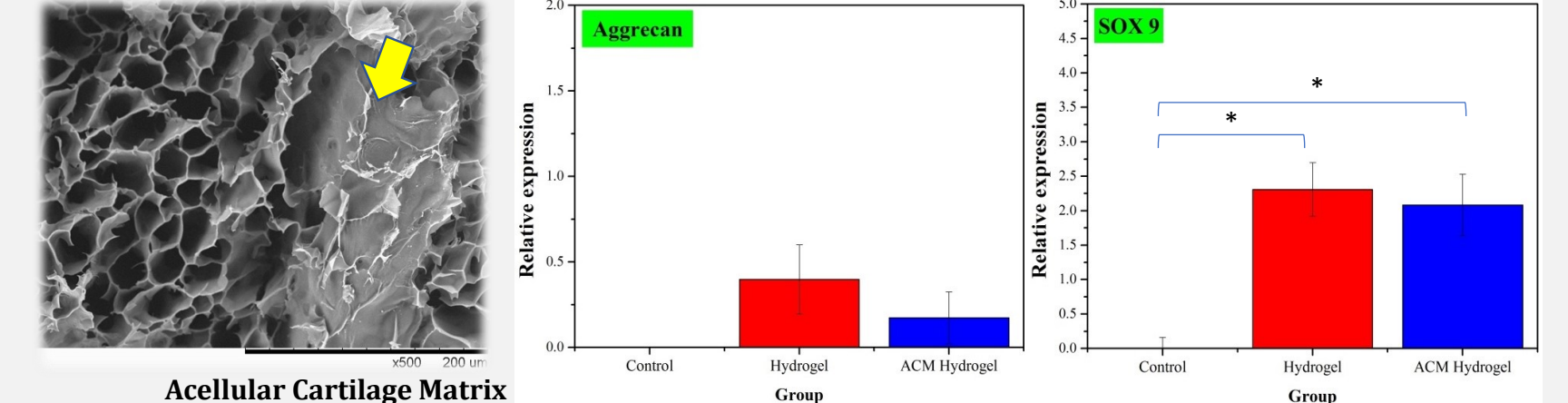
Cell-compatibility Evaluation



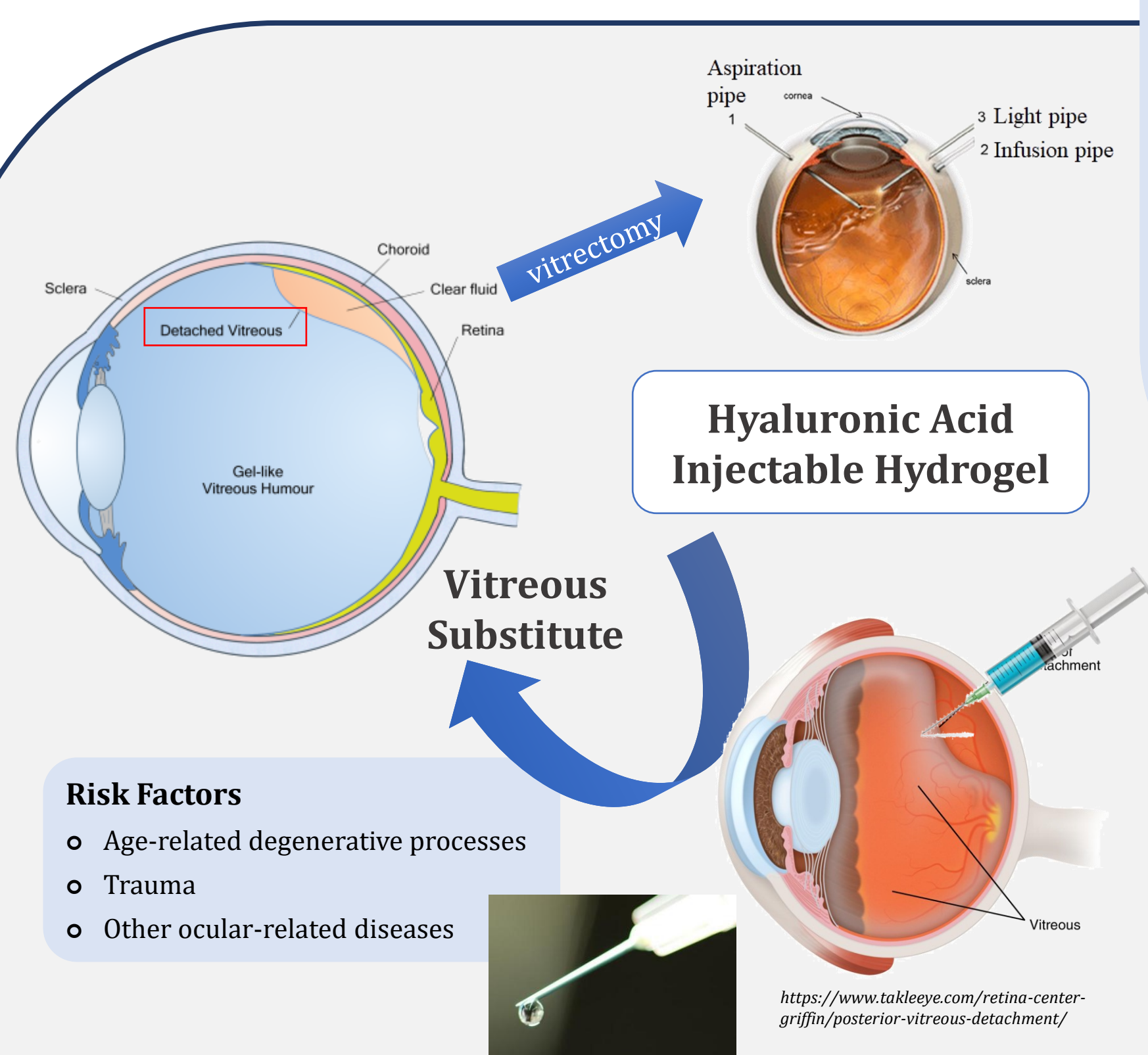
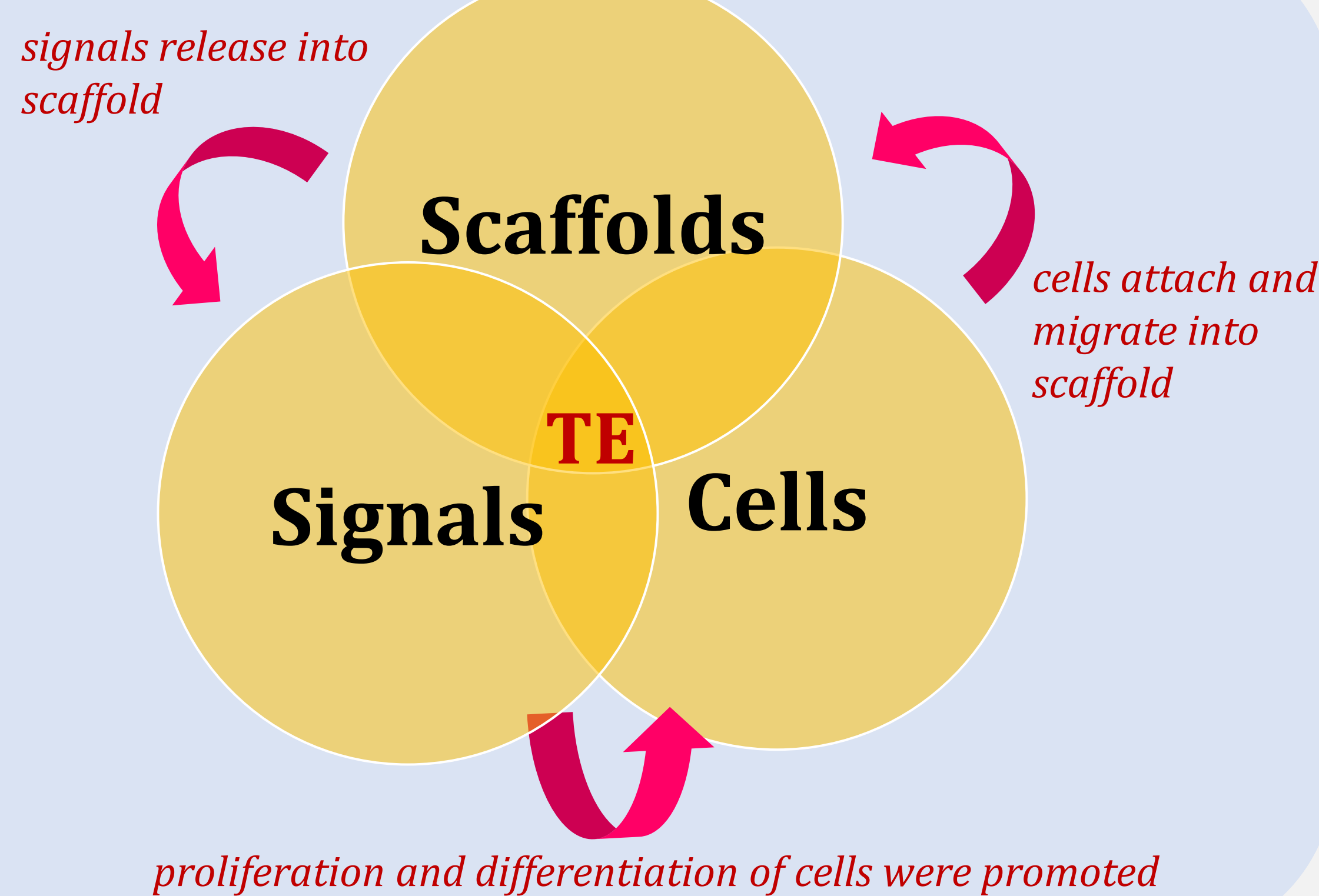
Cartilage Matrix Staining



Gene Expression Analysis



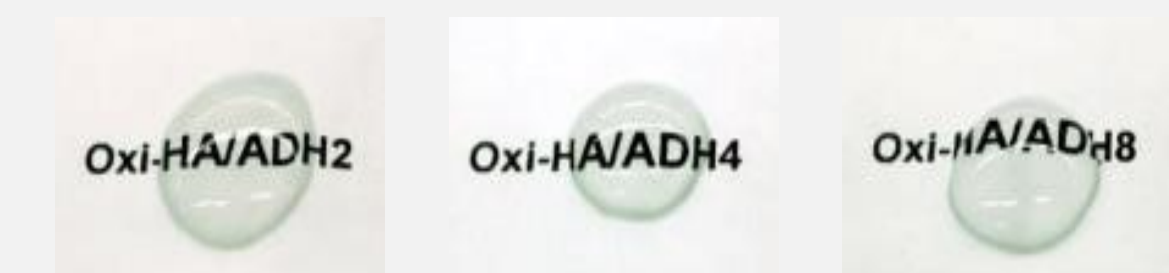
abbr. MSC: mesenchymal stem cells; ACM: acellular cartilage matrix



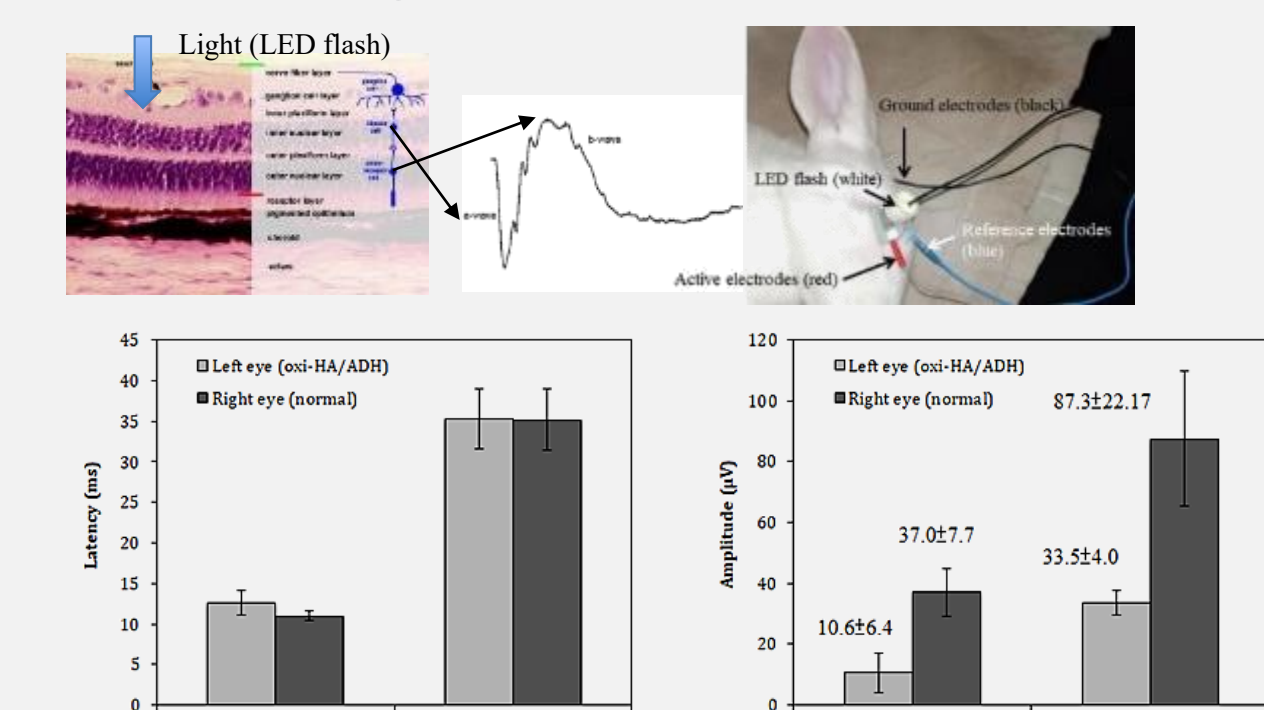
- Risk Factors
 - Age-related degenerative processes
 - Trauma
 - Other ocular-related diseases

Refractive Index

Hydrogel	RI
Oxi-HA/ADH2	1.3420 ± 0.0000
Oxi-HA/ADH4	1.3427 ± 0.0001
Oxi-HA/ADH8	1.3442 ± 0.0001

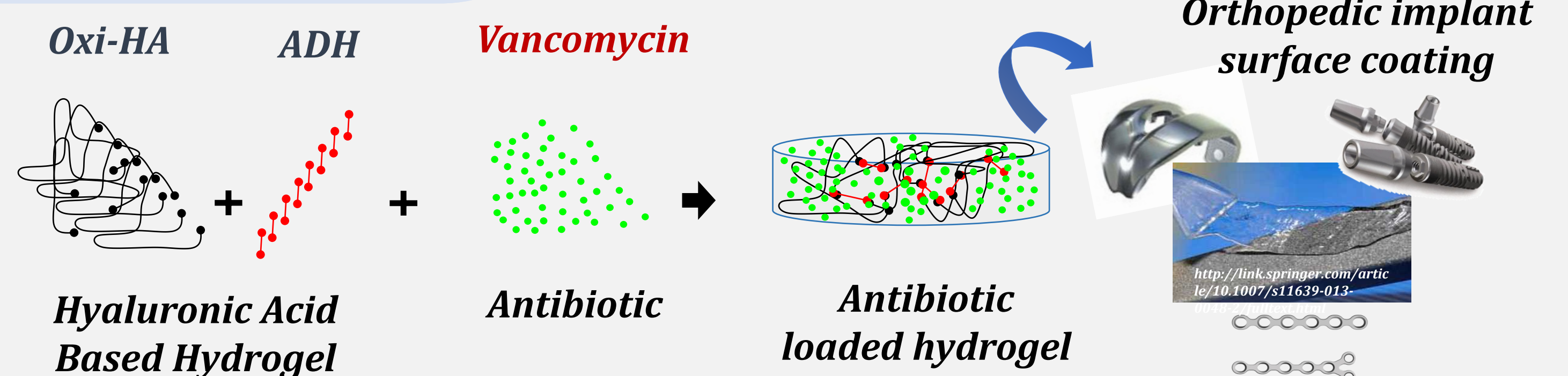
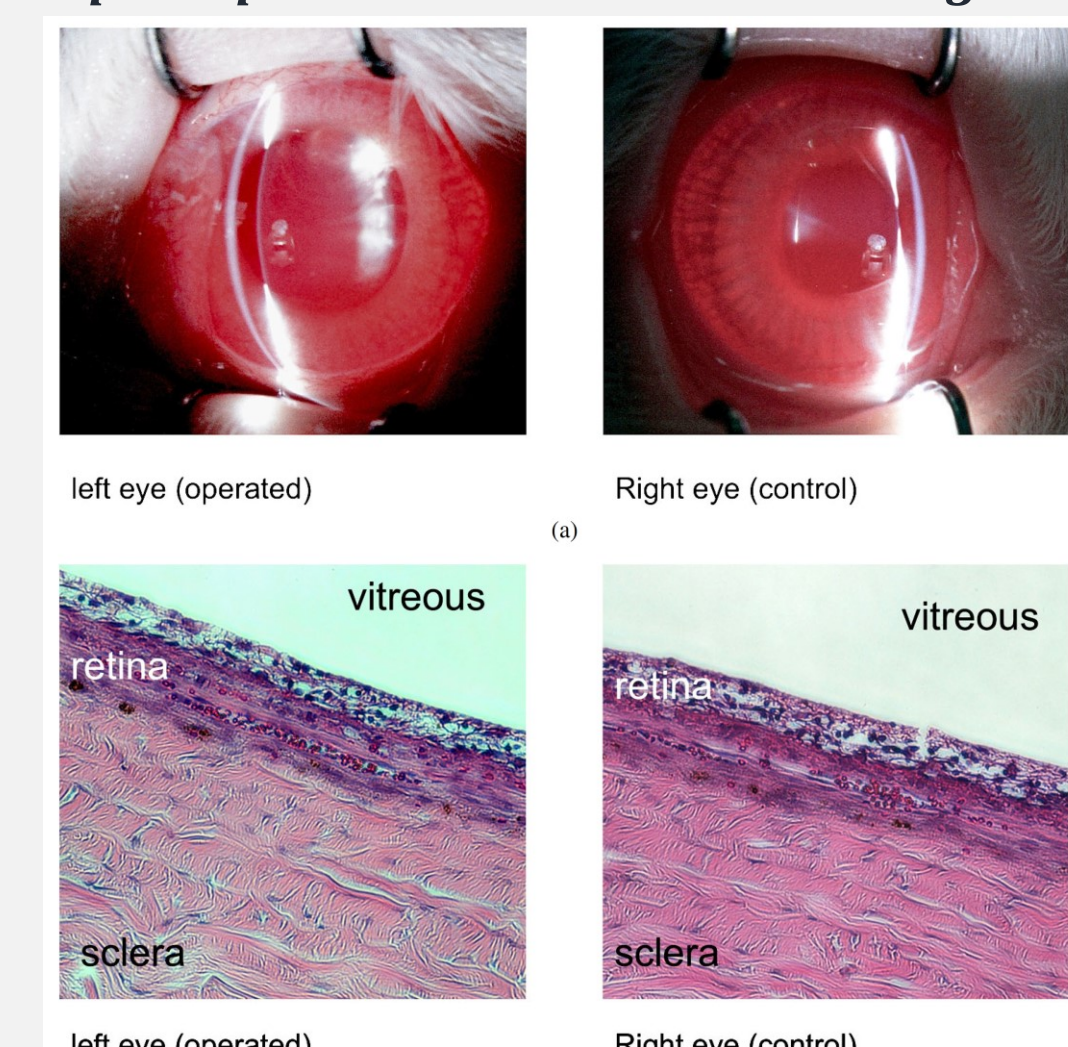


Electroretinography Analysis

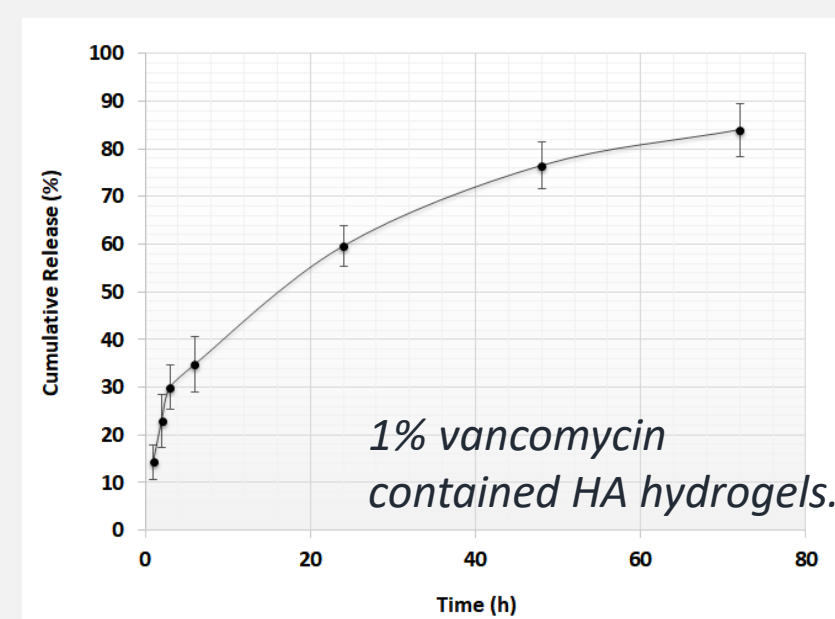


abbr. RI: Refractive index; HE: Haematoxylin and Eosin

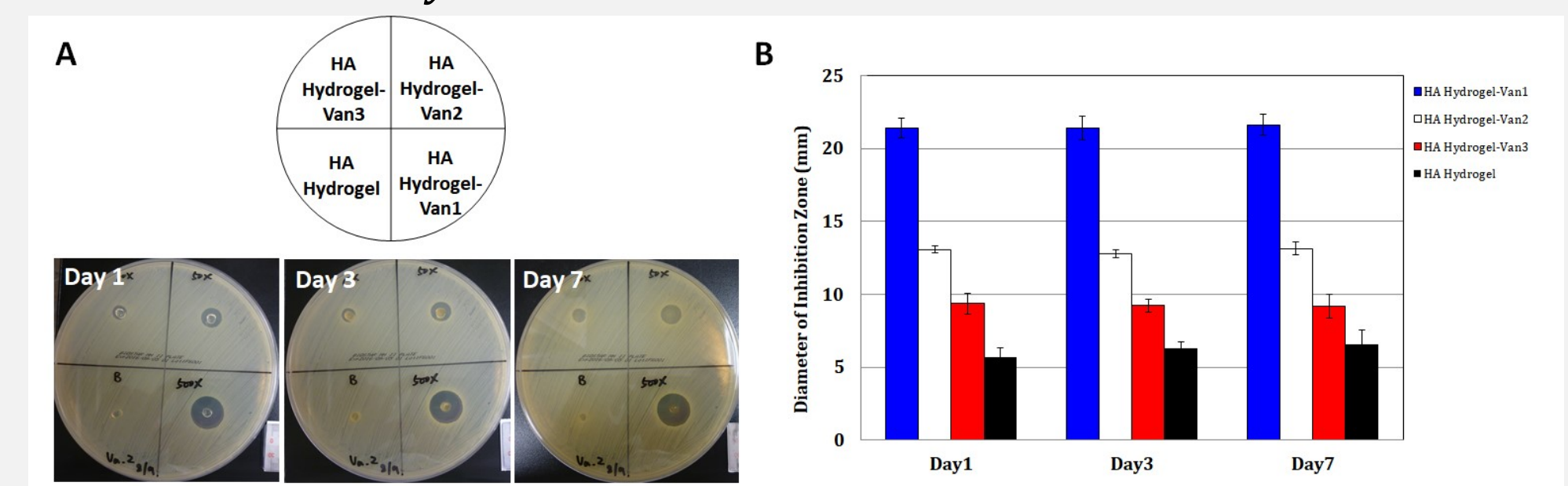
Slip Lamp Examination and HE Staining



Drug Releasing Profile



Antimicrobial activity



Biofilm Formation Inhibition Test

Vitreous Substitute

Antibacterial hydrogel