

# **3D co-cultured endothelial cells and monocytes promoted cancer stem cells stemness and malignancy**

Shupei Qiao<sup>a,b,1</sup>, Yufang Zhao<sup>a,1</sup>, Hui Tian<sup>a,1</sup>, Ishara Manike<sup>a</sup>, Liang Ma<sup>a</sup>, Hongji Yan<sup>c,d\*</sup> and Weiming Tian<sup>a,\*</sup>

<sup>a</sup> School of Life Science and Technology, Harbin Institute of Technology, 150080, Harbin, P. R. China.

<sup>b</sup> Harbin Medical University, 150080, Harbin, P. R. China.

<sup>c</sup> Division of Glycoscience, Department of Chemistry, School of Engineering Sciences in Chemistry, Biotechnology and Health, KTH, Royal Institute of Technology, AlbaNova University Center, 106 91 Stockholm, Sweden

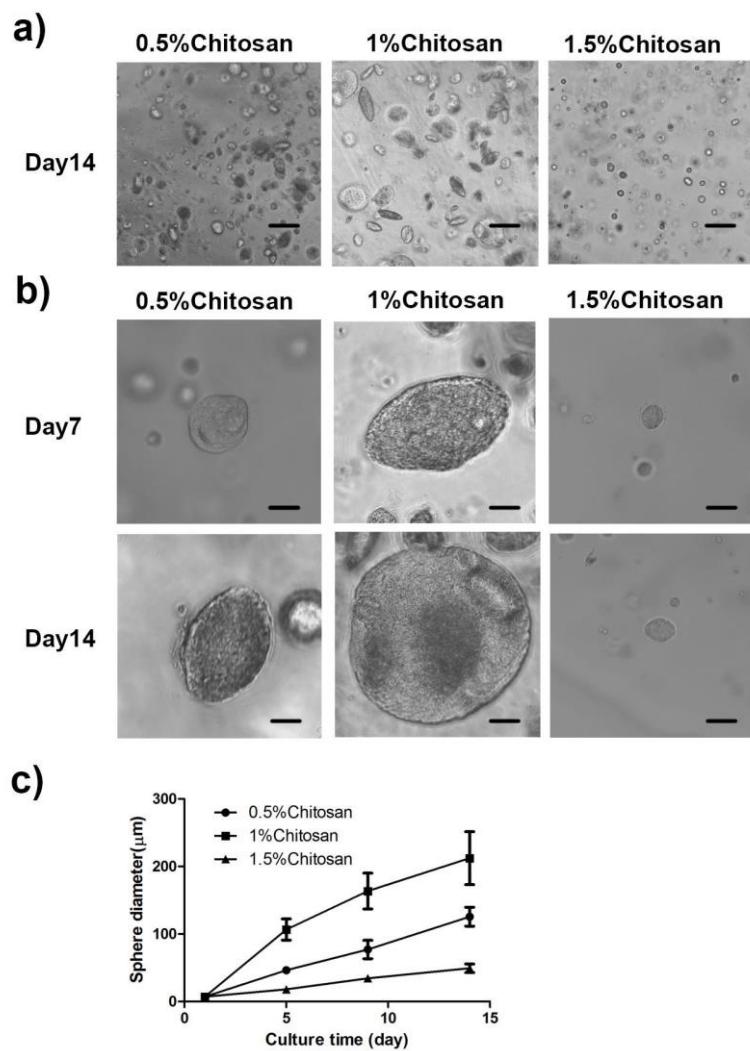
<sup>d</sup> AIMES - Center for the Advancement of Integrated Medical and Engineering Sciences, Karolinska Institute, Department of Neuroscience/Biomedicum, 171 77, Solnavägen 9, Solna, Sweden

<sup>1</sup>Equal contribution

\*Corresponding authors

E-mail: hongji@kth.se (Dr. Hongji Yan)

E-mail: tianweiming@hit.edu.cn (Prof. Weiming Tian)



**S1.** Effects of hydrogels with different concentrations of chitosan on stromal cells growth and proliferation

a), b) Observation of stromal cell morphology, the scales are 500  $\mu\text{m}$  and 50  $\mu\text{m}$ , respectively; c) Clone diameter statistics, the data represent the mean  $\pm$  s.e.m., n = 12;

**Supplementary Table 1** primer information for Real-time RT-PCR

Gene name	Sense/antisense primers (5'-3')
<i>CD44</i>	TCGATTGAATGTAACCTGCCG CAGTCCGGAGATACTGTAGC
<i>CD24</i>	GTTGCACCGTTCCCGTAA CCCCTCTGGTGGTAGCGTTA
<i>MMP9</i>	CTGGACAGCCAGACACTAAAG CTCGCGCAAGTCTTCAGAG
<i>Sox2</i>	GCGGAGTGGAAACTTTGTCC CGGGAAGCGTGTACTTATCCTT
<i>Nanog</i>	TCTTCCTGGTCCCCACAGTTT GCAAGAACATAGTTCTCGGGATGAA
<i>Sac1</i>	GCAGCCTACGAGCATCTGAAG GGACACTCGGTCAATGATGAGTA
<i>MDR1</i>	CTGTTGGCGTATTGGGATGT CAGCATCAAGAGGGAAAGTAATG
<i>mACTB</i>	GGCTGTATTCCCCTCCATCG CCAGTTGGTAACAATGCCATGT
<i>IL-10</i>	GACTTAAGGGTTACCTGGGTTG TCACATGCGCCTTGATGTCTG
<i>Arg-1</i>	TGGACAGACTAGGAATTGGCA CCAGTCGTCAACATCAAAACT
<i>TGF- <math>\beta</math></i>	CAATTCCCTGGCGATACCTCAG GCACAACCTCCGGTGACATCAA
<i>iNOS</i>	AGGGACAAGCCTACCCCTC CTCATCTCCCGTCAGTTGGT
<i>IL-12</i>	CCTTGCACCTCTGAAGAGATTGA ACAGGGCCATCATAAAAGAGGT
<i>TNF- <math>\alpha</math></i>	GAGGCCAAGCCCTGGTATG CGGGCCGATTGATCTCAGC
<i>IL-6</i>	CCTGAACCTTCAAAGATGGC TTCACCAGGCAAGTCTCCTCA
<i>hACTB</i>	CATGTACGTTGCTATCCAGGC CTCCTTAATGTCACGCACGAT