Crosslink Density of a Biomimetic Poly(HEMA)-based Hydrogel Influences Growth and Proliferation of Attachment Dependent RMS 13 Cells

SUPPLEMENTAL MATERIALS

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List of Tables

SUPPORTING INFORMATION TABLES

Table S1. Molecular constituents, structure and composition of the biomimetic poly(HEMA)-based hydrogels

Sample Number	1	2	3	4	5	6	Comments
TEGDA Mole%	1.00	3.00	5.00	7.00	9.00	12.00	Variable
HEMA Mole%	80.00	78.00	76.00	74.00	72.00	69.00	Dependent Variable
PEG(400)MA Mole% Repeat Units	5.00	5.00	5.00	5.00	5.00	5.00	Constant
MPC Mole%	1.00	1.00	1.00	1.00	1.00	1.00	Constant
HMMA Mole%	5.00	5.00	5.00	5.00	5.00	5.00	Constant
Poly(NVP) Mole% Repeat Units	2.00	2.00	2.00	2.00	2.00	2.00	Constant
DMAEMA Mole%	5.00	5.00	5.00	5.00	5.00	5.00	Constant
DMPA Mole%	1.00	1.00	1.00	1.00	1.00	1.00	Constant
Ethylene Glycol Wt%	10.00	10.00	10.00	10.00	10.00	10.00	Constant
Water Wt%	10.00	10.00	10.00	10.00	10.00	10.00	Constant

Table S2. Summary of hydrogel composition and key properties. Data is shown as mean ± standard deviation.

Hydrogels	**TEGDA 1%**	**TEGDA 3%**	**TEGDA 5%**	**TEGDA 7%**	**TEGDA 9%**	**TEGDA 12%**
Bulk water %	38.00	37.00	41.00	39.00	44.00	41.00
Bound water %	8.10	8.00	7.30	4.20	2.20	1.40
Bulk:Bound Ratio	4.2	4.4	4.9	8.3	17.4	27.0
Tg, °C	134.5	128.0	126.1	119.0	113.3	110.7
Young modulus (kPa)	152±62	241±115	356±140	766±325	1464±598	1777±1152

SUPPORTING INFORMATION FIGURES

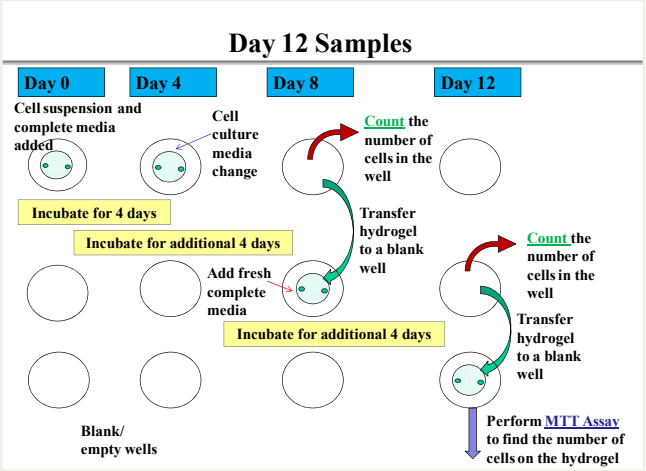

Figure S1. A schematic illustration of the experimental protocol for cell culture of attachment dependent RMS13 muscle fibroblast cultured on discs of bioactive hydrogels of various cross-linker concentrations within 24-well plates for 12 days.

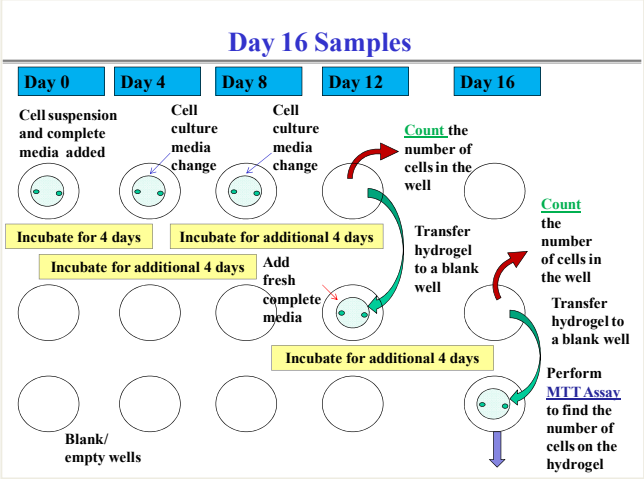

Figure S2. Schematic illustration of the experimental protocol for cell culture of attachment dependent RMS13 muscle fibroblast cultured on discs of bioactive hydrogels of various cross-linker concentrations within 24-well plates for 16 days.

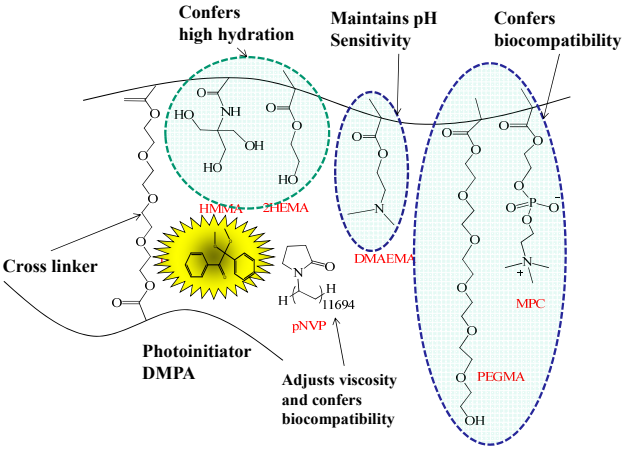

Figure S3. A schematic illustration the individual monomer molecular structures that comprise the biomimetic poly(HEMA)-based hydrogels.

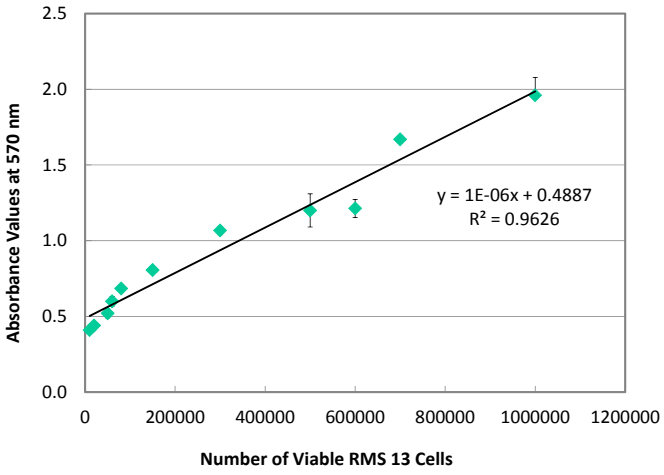

Figure S4. A calibration plot of the performance of the MTT assay using different RMS 13 cell densities.

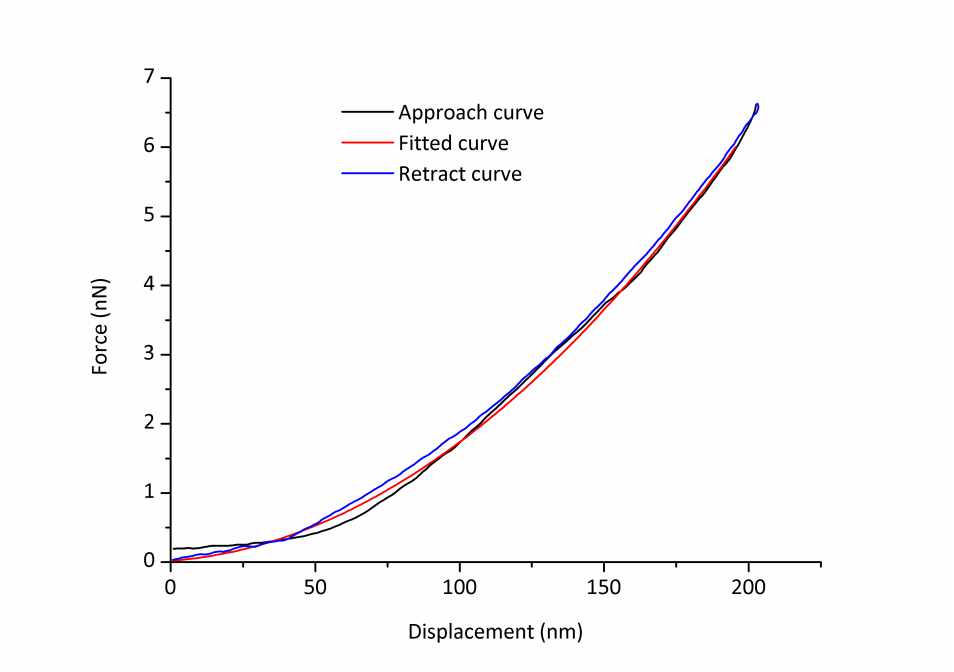

Figure S5. Exemplary AFM force-displacement plot. Black curve indicates AFM tip approach curve, blue curve indicates AFM tip retract curve and red curve indicates Hertz model fitted curve.