

Supplementary information

Genetically Encoded in situ Gelation Redox-Responsive Collagen-Like Protein Hydrogel for Accelerating Diabetic Wound Healing

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Supplementary figure 1: Amino acid sequence of proteins

C1-eCLP3-C1

M **CGG**ADEQEEKAKVRTELIQELAQGLGGIEKKNFPTLGDEDLDHTYMTKLLTYLQEREQ
AENSWRKRLKGIQDHALDGGPCPPCGPKGEQGPQGLPGKDGEAGAQQGPAGMPGAGE
QGEKGEPGTQGAKEDRGETGPKGPKGERGEAGPAGKDGEPGPVGPAGPKGEQGPQGLP
GKDGEAGAQQGPAGMPGAGEQGEKGEPGTQGAKEDRGETGPKGPKGERGEAGPAGKD
GEPGPVGPAGPKGEQGPQGLPGKDGEAGAQQGPAGMPGAGEQGEKGEPGTQGAKEDRG
ETGPKGPKGERGEAGPAGKDGEPGPVGPAGGPCPPCRGDGGC*

C2-eCLP3-C2

M **CGGCGG** ADEQEEKAKVRTELIQELAQGLGGIEKKNFPTLGDEDLDHTYMTKLLTYLQE
REQAENSWRKRLKGIQDHALDGGPCPPC **GPKGEQGPQGLPGKDGEAGAQQPAGPMGP**
AGEQGEKGEPGTQGAKEDRGETGPKGPKGERGEAGPAGKDGEPGPVGPA **GPKGEQGPQ**
GLPGKDGEAGAQQPAGPMGPAGEQGEKGEPGTQGAKEDRGETGPKGPKGERGEAGPAG
KDGEPGPVGPA **GPKGEQGPQGLPGKDGEAGAQQPAGPMGPAGEQGEKGEPGTQGAKED**
RGETGPKGPKGERGEAGPAGKDGEPGPVGPA **GGPCPPC** **RGD** **GGCGGC***

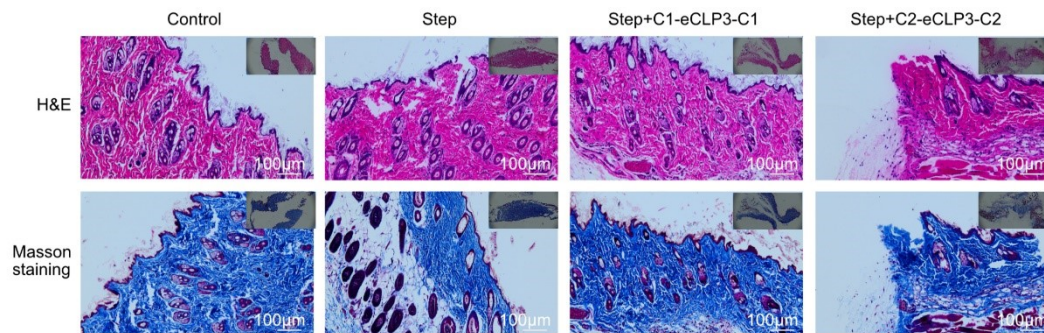
Amino acid sequence of C1-eCLP3-C1. **CGG**; **V-domain**; **CPPC**; **Collagen-like domain-1**;
Collagen-like domain-2; **Collagen-like domain-3**; **RGD**.

Supplementary Table 1: Proteomics of eCLP3 template protein

Protein description	Score	Coverage	# Peptides	# PSMs	# AAs	MW [kDa]	calc. pI
eCLP3	6442.00	73.00	20	199	363.00	36.40	5.90
Sequence	PSMs	Modifications	IonScore	Charge	MH+[Da]	Δ M[ppm]	RT [min]
DGEPGPVGPAGPK	40		53	2	1177.58	0.51	25.23
DGEPGPVGPAGPKGEQGPQGLPGK	1		46	2	2226.11	-0.17	12.31
EQAENSWR	1		39	2	1019.45	0.23	8.31
GEAGPAGKDGEPPVGPAGPK	11		98	2	1844.91	2.66	9.69
GEPGTQGAK	1		31	2	844.42	-0.99	5.66
GEPGTQGAKEGDRGETGPK	2		55	2	1813.87	1	6.69
GEQGPQGLPGK	17		37	2	1067.55	2.08	9.34
GEQGPQGLPGKDGEAGAQQPAGPMGPAGEQGEK	2		81	2	3059.41	0.83	12.32
GEQGPQGLPGKDGEAGAQQPAGPMGPAGEQGEK	2	1xOxidation[M24]	36	3	3075.41	1.18	10.78
GEQGPQGLPGKDGEAGAQQPAGPMGPAGEQGEKGEPGTQG	1	1xOxidation[M24]	32	3	3900.81	1.77	10.53
GIQDHALDGGPCPPCR	1	2xCarbamidomethyl[C12;C15]	24	3	1749.78	-0.26	11.38
GPKGEQGPQGLPGK	2		67	2	1349.72	0.65	8.28
KNFPTLGDELDHTYMTK	1		61	3	2124.99	2.38	15.02
KNFPTLGDELDHTYMTK	2	1xOxidation[M16]	56	2	2140.99	1.29	13.24
LLTYLQER	43		59	2	1035.58	-0.02	14.76
LLTYLQEREQAENSWR	1		26	3	2036.02	-0.52	15.57
NFPTLGDELDHTYMTK	5		131	2	1996.90	5.01	16.96
NFPTLGDELDHTYMTK	11	1xOxidation[M15]	91	2	2012.89	0.46	16.45
TELIQELAQGLGGIEK	36		93	2	1698.93	0.75	24.03

TELIQELAQGLGGIEKK	2	73	2	1827.02	-0.5	22.03
VRTELIQELAQGLGGIEK	1	95	2	1954.10	-1.39	21.90

Supplementary figure 2: Amino acid sequence of proteins



Supplementary figure2. Hematoxylin-eosin (H&E) and Masson's trichrome staining were performed to investigate the effects of the hydrogels on wound repair.