Supplementary Table 4 Manufacturing detail and reference crosswalk

The detailed manufacturing examples below retain the eight-row table from the submitted v4. Main Table 1 now compares functional observations across these eight studies and two additional registered skin studies. The core registers retain 19 primary/translational studies and 10 reviews.

Detailed manufacturing examples

Study	Formulation and printing	Printed cells	Construct	Model and follow-up
[17]	Fibrinogen 30 mg/mL + gelatin 35 mg/mL + HA 3 mg/mL; thrombin 20 IU/mL; ITOP pneumatic extrusion; 500-µm nozzle, 60–90 kPa	KC/melanocyte; FB/FDPC/HDMEC; preadipocyte	3×3 cm, ~1 mm, epidermis–dermis–hypodermis	Acute 2.5×2.5-cm full-thickness nude-mouse wound; *n* = 4/group; 21 d
[24]	10% gelatin + 4% alginate + 5% PRP; 1% transglutaminase; Robot-assisted in-situ extrusion; 200-µm nozzle, 0.15 MPa, 15 mm/s, 31 °C	Dermal fibroblasts + epidermal stem cells; no printed EC	Bilayer, 0.3 mm/layer *in vitro*; wound-matched in situ	Acute 15-mm splinted rat wound; animal n NR; 21 d
[18]	Vessel ink: 2% alginate/5% GelMA; 0.5% CaCl2 + 406-nm light. Other layers: 5% GelMA/HFF-1, 3% GelMA/HUVEC, 20% GelMA epidermal base. Hybrid coaxial/extrusion; 17G/22G exemplar	Printed HUVEC/HFF-1 compartments; KCs post-seeded	Hierarchical small-to-micro multilayer skin; total thickness NR	*In vitro*; *n* = 3 assay repeats; independent donor/construct totals NR; 14 d
[25]	4% GelMA + 8% SilMA + 0.25% LAP; UV 25 mW/cm²/30 s; BioX extrusion; 400-µm nozzle, 100 kPa, 90 mm/min	Mouse dermal FB only	Single-layer ~8-mm patch; ~400 µm reported for test patches	Acute paired 8-mm mouse wounds; reported *n* = 3/group (unit unclear); total animals NR; 12 d
[40]	5.5% (w/v) PGA-SH + 5.5% (w/v) PGA-GMA + 0.1% (w/v) RGDC + 0.1% (w/v) LAP; all-peptide γ-PGA hydrogel; thiol–ene photochemistry; DLP; 405 nm, 32 s/layer, 0.2-mm layers	VEGF165-overexpressing HUVEC, 1×10^5/mL	10×3-mm printed cylinder	STZ diabetic 10-mm rat wound; main *n* = 82 plus *n* = 30 splint study; 21 d
[19]	10% GelMA + 20 µM curcumin; blue-light 20–30 s; BioArchitect Pro extrusion; 210-µm nozzle, 0.2 MPa, 5 mm/s	Human ADSC, 5×10^5/mL; no EC	Circular porous grid; implant size NR	STZ diabetic 15-mm splinted nude-mouse wound; *n* = 30 total; 21 d
[39]	Collagen methacrylate screened at 0.75–1.0%; exact implant concentration NR. DHM 0.01%; LAP/tartrazine; DLP 405 nm; animal construct: 25-µm layers, 16-s exposure	HDF in treatment construct; HUVEC only in printability tests	9×2.5-mm bilayer multichannel construct	STZ diabetic 9-mm rat wounds; *n* = 15/group plus *n* = 5 acute controls; 18 d
[23]	Xeno-free collagen-I/fibronectin/VitroGel around a PGA mesh; BioX extrusion; 25G/50 kPa dermis, 30G/20 kPa epidermis	Cord-blood EC + placental PC + FB; KC	~2 cm² bilayer graft; 1-mm PGA mesh	Immunodeficient mice; 27 mice across 3 experiments; 2–6 wk

Selected components and operating conditions, not complete replication protocols. Nozzle and scaffold dimensions are not vessel diameters. Units of replication and model follow-up are study-specific. Source details remain in Supplementary Table 1.

Register reference number crosswalk

Supplementary Tables 1–3 preserve the historical submission register, with Chinese descriptions translated into English. Their reference-number fields are v4 locators. Current manuscript references should be matched by stable Source ID and DOI, using the crosswalk below; historical query rows, strings and counts are unchanged.

Source ID	v4 reference	Current reference	DOI
O04	17	18	10.36922/ijb025490504
O05	21	22	10.1089/ten.tea.2019.0201
O07	38	40	10.1038/s41467-023-43364-2
T01	25	26	10.1038/s41598-018-38366-w
T04	107	109	10.3390/gels9010066
O12	19	20	10.1088/1758-5090/ad5d1a
O11	78	80	10.1177/20417314221088513
T05	26	27	10.18063/ijb.v9i2.675
O14	37	39	10.1016/j.mtbio.2025.101908
O03	23	24	10.1016/j.mtbio.2022.100334
O09	27	28	10.34133/2022/9794745
O06	24	25	10.1016/j.mtbio.2023.100550
O01	16	17	10.1089/ten.tea.2019.0319
O08	18	19	10.1093/burnst/tkac001
P5A01	22	23	10.1002/btm2.10324
P5A02	20	21	10.1016/j.mtbio.2025.101974
P5A04	58	60	10.1002/adhm.201500936
P5A06	88	90	10.1016/j.bioactmat.2026.05.029
P5A07	60	62	10.1002/advs.202517409
R01	5	5	10.1088/2631-7990/ad878c
R04	1	1	10.3390/life16040581
R15	3	3	10.1093/burnst/tkaf018
R12	9	9	10.1093/rb/rbac105
R11	2	2	10.3390/ijms23010476
R13	31	33	10.3390/gels11020110
R05	6	6	10.1177/20417314211028574
R09	7	7	10.3390/biom13010055
R10	8	8	10.3390/ph14040362
R14	10	10	10.1007/5584_2024_817

Main Table 1 source anchors

O01; current reference 17; doi:10.1089/ten.tea.2019.0319. Main PDF pp. 3, 6, 11, 13-14; Fig. 1 and Fig. 7.

O03; current reference 24; doi:10.1016/j.mtbio.2022.100334. Main PDF p. 15 Fig. 14; p. 16 Fig. 15A-D; p. 18 Results 3.9.

O04; current reference 18; doi:10.36922/ijb025490504. Main PDF p. 7 Methods 2.3; p. 16 Fig. 4; p. 18 Results 3.3; pp. 23-24 limitations.

O06; current reference 25; doi:10.1016/j.mtbio.2023.100550. Main PDF p. 10 Fig. 7E-F; p. 11 Results 3.4.

O07; current reference 40; doi:10.1038/s41467-023-43364-2. Main PDF pp. 5-6 Fig. 4; p. 10 Fig. 7H-I; p. 12 Fig. 8D; p. 16 animal Methods.

O08; current reference 19; doi:10.1093/burnst/tkac001. Main PDF pp. 2-4 Methods; p. 10 Fig. 6i; p. 11 Results.

O14; current reference 39; doi:10.1016/j.mtbio.2025.101908. Main PDF p. 4 Methods 2.10; p. 9 Results 3.3; p. 12 Fig. 6 and Results 3.7; pp. 13-14 Fig. 7.

P5A01; current reference 23; doi:10.1002/btm2.10324. Main PDF p. 4 Methods 2.7-2.9; p. 9 Fig. 6; pp. 10-11 Results 3.2.

O05; current reference 22; doi:10.1089/ten.tea.2019.0201. Main PDF p. 4 perfusion Methods; p. 6 Fig. 3 and Results; p. 9 Fig. 6C.

P5A02; current reference 21; doi:10.1016/j.mtbio.2025.101974. Full-text Sections 2.10-2.15, 3.4.2-3.4.3.