Supplementary methods notes for the IJB review

This supplement explains preserved discovery records, author verification and their limitations for a critical narrative review. It reconstructs file identity, set membership and count semantics, and distinguishes the confirmed author-verification workflow from historical automated records. It does not establish a complete selection history or independent duplicate screening.

Scope and source records

Supplementary Table 1 contains the 19 archived primary/translational records and Supplementary Table 2 the 10 core reviews. Stable Source IDs, DOI identities and all historical query records are preserved. The historical register contents are preserved in this English-language edition; its reference numbers remain historical v4 locators. Supplementary Table 4 provides the current DOI-based reference crosswalk and manufacturing details. Contextual updates are not additional core experiments or core reviews.

The full-text-extraction sheet of the Phase 4 workbook contains 24 records: 14 primary/translational records and 10 reviews. Phase 5 preserves those 24 and adds P5A01, P5A02, P5A04, P5A06 and P5A07, producing 19 plus 10. The early 35-seed roster includes 24 of these records; 11 seeds are not in the structured core, and five core records were added later. No 35 = 29 + 6 inference is made. Acquisition attempts without a structured core record are not counted.

Seed-stage denominators

The 14 August 2026 archive preserves 415 retrieved records, 341 unique candidate identities, 35 selected seeds and 318 excluded or deferred records. Independent read-only reconstruction using the original DOI, PMID and normalized-title identity rules found 23 seed identities within the 341-candidate pool and 12 outside it. The 318 excluded/deferred identities exactly match the remaining candidate-pool identities: 341 minus 23. The historical 35-seed count and the 318 excluded/deferred count therefore refer to different underlying sets.

The 12 pool-external seeds are O05–O15 and T04. Their acquisition route is not established by that pool log. This explains the apparent arithmetic mismatch without replacing 318 with 306 or inventing a screening flow. The authors performed searching and initial selection, but the pool log does not establish the acquisition route of these external seeds or why every excluded record was rejected.

Separate targeted discovery batch

The 15 August 2026 targeted-discovery archive contains 20 query records, 1,113 stored raw records and 812 deduplicated candidates. Read-only reconstruction reproduces 812 and exactly matches the stored identity set. The historical algorithm merges normalized DOI matches or, where applicable, first-author surname matches with at least 0.90 token-Jaccard title similarity. This describes automated identity merging, not human eligibility adjudication.

The archived automated priorities are A 52, B 132, C 69 and Exclude 559; these add to 812. They are title/abstract prioritization labels, not vascular evidence grades or final full-text decisions. This batch is not combined with the 415-record batch into an exhaustive review denominator.

Query count semantics and retrieval limits

Supplementary Table 3 contains 59 preserved query rows across stages. Twenty-one early rows preserve retrieved or exact-title-match counters, rather than recorded API total-hit counts. In particular, a single Europe PMC page was retrieved and its API total was not saved; Crossref exact-title requests could return several candidates before a single match was selected. The remaining 31 numerical API-hit values belong to the 15 August and 31 August records. Seven later rows have no numerical total-hit count preserved. All original strings and values remain intact, with separate count-kind fields.

A retrieval cap is not a total hit count. Some later PubMed retrievals were limited to 20 IDs, and other baskets used open-access filters. Query rows overlap and include contextual discovery and verification; their number is not a count of independent exhaustive searches. Historical query-row locators added in this round are explicitly internal locators, not newly invented stable study IDs.

Extraction provenance and missing information

The authors performed literature searching, initial selection, scientific extraction and preparation of the original scientific table content. Their previous confirmation covers word-by-word manual checking of the material submitted before the present revision, including the 19 primary/translational studies and three October 12 IJB additions. One author comprehensively checked all 19 studies; another read selected papers and checked key vascular findings. OpenAI Codex assisted editing, source/citation consistency checks and technical document preparation. In the present revision, it also assisted comparison of published assay descriptions and checks of five reviewer-suggested contextual sources. The earlier verification statement is not extended into an assertion that every new revision field has already received author sign-off. No independent duplicate screening or formal disagreement procedure is claimed.

Historical confidence-rating fields and their assignments have been removed from the current submission registers. Source-access limits, unresolved source inconsistencies and historical checking scopes are retained. This removal does not constitute retrospective approval of a rating or a formal risk-of-bias assessment. The author-reported verification statement is recorded separately from the historical study-level audit fields.

NR means absent in the specified source that was actually checked for that field. Source unavailable means the relevant source was not obtained. Historical not-checked labels describe the scope of earlier archived checks; they are retained as provenance and are not newly assigned current verification outcomes. Author confirmation required identifies unresolved wording or conflicting source records. Historical NR values in carried-forward fields are not new evidence of nonreporting. No unperformed assay is interpreted as a negative result.

Targeted source checks and unresolved conflicts

The eleven existing Table 2 source studies were checked for culture/postimplant assessment age, operation settings and direct observation interval. Table 2 retains one row per source while distinguishing experiments within each row. The full source hashes, PDF page/figure anchors, checked-field scope and unavailable supplements/videos are recorded in the internal Source Verification Log. These targeted checks do not constitute full-field review of all 130 references in v4.

The Shah source differs between methods and results in cell-seeding order; no unified culture age is reconstructed. The Hudson source gives 10 days in methods/results and 5 days in the Figure 4C–E caption; both values are retained as a conflict requiring author confirmation. For Baltazar 2020 and 2023,

30 minutes is a tracer-circulation operation before terminal harvest. Separate terminal 2/4/6-week assessments do not demonstrate uninterrupted six-week perfusion.

The Expression of Concern for reference 44 (reference 42 in v4) is retained. Current formal publisher/PubMed metadata were checked, but the publisher notice body was unavailable. No retraction, resolution or cleared status is inferred. Figure 5 retains the original scientific pixels and has approximately 233 effective dpi at its current displayed size; no genuine higher-resolution master was obtained.

Interpretive limits

The available records do not document a registered protocol, complete human full-text exclusion trail, formal risk-of-bias assessment or meta-analysis for this purposive critical narrative review. Availability and retrieval limits constrain coverage. The archived study distribution is not a field-wide prevalence estimate. Model species, immune status and wound history remain applicability descriptors and cannot supply missing vascular endpoints. The historical counts are now traceable.

Search stages and their selection purposes

Date	Record locator	Source or route	Purpose and limitation
August 14 2026	HQ-01–21	Europe PMC topic searches and Crossref title lookup	Seed library; 415 retrieved, 341 candidate identities, 35 seeds with only 23 candidate-pool members
August 15 2026	HQ-22–41	PubMed, OpenAlex and Crossref	Targeted assay/model contrasts; 1,113 raw records and 812 deduplicated candidates; automated priorities
August 31 2026	HQ-42–52	Europe PMC and PubMed	Contextual transport, disease and translational examples; OA filters and retrieval caps
September 5 2026	HQ-53–59	Named-reference lookups	Specified methodological/mechanistic papers; full numerical hit totals not preserved
October 12 2026	Separate contextual update	Recent IJB papers	Three contextual additions; core denominator unchanged
October 29 2026	Reviewer-suggested DOI checks	Publisher records, Crossref, PubMed, available full texts	Five contextual additions; no new broad search or retrospective screening denominator

Analytic coverage of the fixed core

The core is used as a set of assay and model contrasts, rather than a statistically representative sample of bioprinting research. Its analytic role is to compare observations in defined skin constructs, distinguish structural or repair outcomes from construct-localized flow, and examine limits on transfer to wound treatment. Marker-only studies and the clinical ulcer series without a vascular endpoint make these boundaries explicit. Non-transplanted skin models and the non-skin flap study contribute only to the transport or connection questions they examine. This coverage fits the claim-interpretation objective, but does not establish that every relevant technology or study was captured. The 19-study count describes the registered reading set and is not a field-wide denominator.

The ten reviews supply terminology, design principles and interpretation, not independent experimental replication. Historical query basket names are preserved solely to identify the requests as run; they are

not current vascular-function ranks. The stage-specific rules and availability limits prevent a claim of complete or statistically representative coverage.

Reviewer suggested contextual sources checked on 29 October 2026

Current reference 85; doi:10.18063/ijb.726. In vitro skin-derived vascular tissue fabrication model; no keratinocyte epidermis or transplantation. Porcine skin dECM with dermal fibroblasts and HUVEC/alginate core; pre-set coaxial extrusion and biochemical-gradient-induced sprouting. Source access: Publisher open-access full text, Methods and Figures 2 and 5.

Current reference 14; doi:10.18063/ijb.757. Review organized around biological material functions, printing technologies, wound dressings and skin scaffolds; secondary contextual source. Source access: Available full text, Sections 3–5 and Tables 2–3.

Current reference 116; doi:10.1016/j.carbpol.2025.124835. Nonprinted glucose-responsive chitosan/PVA nanohydrogel; recipient-bed chemical/antimicrobial modulation and angiogenic marker observations in experimental diabetic wounds. Source access: PubMed and publisher abstracts; complete methods not obtained.

Current reference 117; doi:10.1002/slct.202400566. Composite film with antioxidant/antibacterial properties; S. aureus-infected mouse-wound repair in publisher abstract. Source access: Publisher abstract and graphical abstract; complete methods not obtained.

Current reference 118; doi:10.1007/s13233-023-00204-y. Explicitly electrospun composite dressing membrane; water absorption, air permeability, cytocompatibility and hemocompatibility characterization. Source access: Publisher abstract; subscription full text not obtained.

Only qualitative abstract-supported material functions are drawn from the three non-printed dressing studies; no new efficacy numbers, animal denominators or graft-flow observations are extracted from inaccessible methods. The assigned 2026 Carbohydrate Polymers volume is used despite the 2025 DOI and online-publication year. IJB726 is cited as 2023 according to the publisher, PubMed and article PDF, despite a conflicting Crossref date.