Article quality check report

Artificial Intelligence-Driven Prediction and Optimization of Drug Release and Absorption in Controlled Release Drug Delivery Systems

Asian Journal of Biological and Life Sciences (AJBLS) · Review Article · Detected style: APA 7

36%	14 of 39 checks passing 22 warnings · 3 missing items	Recommendation **Major correction needed**

Manuscript details

Article ID	AJBLS-2026-0029-MS-F-QC
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Reference style checked	APA 7
Report date	24 Sept 2026

Final recommendation

Major correction needed

This review manuscript is well-organized and topically coherent, but requires several corrections before it is submission-ready. Administrative gaps are the most pressing issue: Author Contributions and Funding statements are both absent and must be added. Reference quality is a recurring problem — all 14 references lack DOIs, two textbook references (Aulton, Martin) are missing publication years entirely, and the Serrano et al. (2024) entry uses a non-standard truncated author list. The citation cross-check further identified one unused reference (Korsmeyer et al., 1983) that appears related to but is not cited in the Korsmeyer-Peppas Model subsection. Secondary issues include a structured abstract atypical for a Review Article, an absent graphical abstract, and overly brief figure captions. Once the administrative statements are added, references are enriched with DOIs and corrected years, and the unused reference and abstract-format questions are resolved, the manuscript should be in good shape for submission.

Action items

8 issues

Add Author Contributions Statement

Critical

Location: End of manuscript, near Conflict of Interest section. No Author Contributions section is present; this is a standard requirement for most journals and must be added before submission.

Add Funding Statement

Critical

Location: End of manuscript, near Conflict of Interest section. No Funding statement is present; provide funding source details or explicitly state that no funding was received.

Correct Missing Publication Years in References

Critical

Location: Reference list - Aulton and Martin entries. Two textbook references (Aulton's Pharmaceutics; Martin's Physical Pharmacy) are missing publication years, which is required bibliographic information for APA 7.

Provide Missing DOIs

Moderate

Location: Reference list - all 14 entries. None of the 14 references include a DOI; search Crossref/PubMed to add DOIs where available to improve traceability and compliance.

Resolve Unused Reference

Moderate

Location: Reference list - Korsmeyer et al. (1983); Fundamentals section - Korsmeyer-Peppas Model subsection. The Korsmeyer et al. (1983) reference is never cited in-text despite a dedicated subsection discussing this exact model; either add the citation or remove the unused reference.

Confirm Abstract Structure for Review Article

Moderate

Location: Abstract section. The abstract uses a structured format (Background/Objectives/Materials and Methods/Results/Conclusion) atypical for Review Articles; confirm this matches journal style or convert to unstructured format.

Expand Figure Captions

Moderate

Location: Figure 1 and Figure 2 legends. Both figure captions are only a few words long and do not describe the figure content; expand for clarity and to satisfy typical journal requirements.

Add Graphical Abstract

Moderate

No graphical abstract was found; add one if required by the target journal.

Fix Serrano et al. Reference Author List Formatting

Minor

Location: Reference list - Serrano et al. (2024). The reference truncates the author list with 'et al.' inside the entry itself rather than listing all authors or using an APA 7 ellipsis; correct the formatting.

Fix Heading Capitalization

Minor

Location: Section heading 'Applications Of Ai In Predicting Absorption Kinetics'. The abbreviation 'AI' is incorrectly capitalized as 'Ai' in this heading; correct to 'AI'.

Fix Missing Punctuation and Heading/Paragraph Break

Minor

Location: Diffusion-Controlled Drug Release paragraph; Swelling-Controlled Drug Release heading. A missing period creates a run-on sentence ('...diffusion equations Instead of...'), and the 'Swelling-Controlled Drug Release' subheading runs directly into paragraph text without a break; both should be corrected for readability.

Article Type

No issues

Article Type

Present

Review Article, explicitly labelled on the manuscript.

Running Title

No issues

Running Title

Present

"Patel, et al.: AI-Driven Prediction and Optimization of Drug Release and Absorption" appears in the header (<RH> tag).

Title of the Manuscript

No issues

Title of the Manuscript

Present

"Artificial Intelligence-Driven Prediction and Optimization of Drug Release and Absorption in Controlled Release Drug Delivery Systems" - clear and descriptive.

Abstract Check

1 issue

Structured Abstract in a Review Article

Warning

The abstract is fully structured (Background, Objectives, Materials and Methods, Results, Conclusion), which is the format normally reserved for Original Articles. Review Articles conventionally use an unstructured, single-paragraph abstract.

Suggestion: Confirm target journal formatting requirements; if unstructured abstracts are required for Review Articles, convert to a single continuous paragraph.

Keywords

No issues

Alphabetical

Present

Artificial Intelligence, Controlled Release Drug Delivery Systems, Drug Absorption, Drug Release Kinetics, Machine Learning — already listed in correct alphabetical order.

Graphical Abstract

1 issue

Graphical Abstract

Missing

No graphical abstract found in the manuscript.

Suggestion: Add a graphical abstract summarizing AI-driven prediction/optimization of drug release, if required by the target journal.

Heading Order & Structure

5 issues

Introduction

Present

Present.

Materials and Methods (review methodology)

Warning

The abstract references a Materials and Methods section, but no dedicated body section describing literature search methodology/criteria is present.

Suggestion: Add a brief Methods section describing databases searched, search terms, and inclusion/exclusion criteria used for this review.

Results / Discussion (Applications sections)

Present

Present, organized under 'Applications of AI in Predicting Drug Release', 'Applications of AI in Predicting Absorption Kinetics', and 'Integration of AI with Controlled Release Systems'.

Conclusion

Present

Present.

Abbreviations

Present

Present, listed in paragraph format.

Conflict of Interest

Present

Present.

Author Contributions

Missing

MISSING.

Suggestion: Add an Author Contributions statement detailing each author's role.

Funding Statement

Missing

MISSING.

Suggestion: Add a Funding statement (or state 'No funding was received').

Acknowledgements

Warning

MISSING.

Suggestion: Add an Acknowledgements section if applicable, or omit if not required.

Formatting Issue

Warning

The subheading 'Swelling-Controlled Drug Release' runs directly into body text without a paragraph break.

Suggestion: Insert a line break/paragraph separation after the 'Swelling-Controlled Drug Release' subheading.

Reference Quality Check

15 issues

Detected Style

Present

APA 7 (author-date in-text citations, reference list in APA format).

Ref 1 — Alum & Ugwu, 2025

Warning

Author format, year, title, journal, volume/issue/page correct. DOI missing.

Suggestion: Search Crossref for DOI.

Ref 2 — Aulton, n.d.

Warning

Publication year is missing entirely (should not be blank; use edition year or 'n.d.' explicitly). DOI/ISBN not applicable but year is required.

Suggestion: Provide the correct publication year and edition number for Aulton's Pharmaceutics.

Ref 3 — Higuchi, 1961

Warning

Author, year, title, journal, volume/issue/pages correct. DOI missing.

Suggestion: Search Crossref for DOI.

Ref 4 — Higuchi, 1963

Warning

Author, year, title, journal, volume/issue/pages correct. DOI missing.

Suggestion: Search Crossref for DOI.

Ref 5 — Jena et al., 2024

Warning

Author list, year, title, journal, volume/issue/article number correct. DOI missing.

Suggestion: Search Crossref for DOI.

Ref 6 — Khalifa, 2025

Warning

Author, year, title, journal, volume/issue/pages correct. DOI missing.

Suggestion: Search Crossref for DOI.

Ref 7 — Korsmeyer et al., 1983

Warning

Author list, year, title, journal, volume/issue/pages correct. DOI missing. Also not cited anywhere in-text (see citation cross-check).

Suggestion: Search Crossref for DOI; verify whether this reference should be cited in the Korsmeyer-Peppas Model section.

Ref 8 — Martin, n.d.

Warning

Publication year is missing entirely.

Suggestion: Provide the correct publication year and edition for Martin's Physical Pharmacy.

Ref 9 — Mishra et al., 2025 (A. Mishra)

Warning

Author list, year, title, journal, volume/issue/article number correct. DOI missing.

Suggestion: Search Crossref for DOI.

Ref 10 — Mishra & Dasari, 2025

Warning

Author format, year, title, journal, volume/issue/pages correct. DOI missing.

Suggestion: Search Crossref for DOI.

Ref 11 — Panchpuri et al., 2025 Warning

Author list, year, title, journal, volume/issue/pages correct. DOI missing.

Suggestion: Search Crossref for DOI.

Ref 12 — Serrano et al., 2024 Warning

Author list truncated with 'et al.' inside the reference entry itself rather than listing all authors or using an ellipsis per APA 7 rules. DOI missing.

Suggestion: List all authors up to 20, or use ellipsis (...) format per APA 7; search Crossref for DOI.

Ref 13 — Shao, 2023 Warning

Author, year, title present; source is conference proceedings lacking volume/issue. DOI missing.

Suggestion: Provide conference name/location details if available; search Crossref for DOI.

Ref 14 — Suksaeree, 2025 Warning

Author, year, title, journal, volume/issue/pages correct. DOI missing.

Suggestion: Search Crossref for DOI.

Reference Count Summary Warning

Total: 14. Fully complete (with DOI): 0. Issues: 14 (all missing DOI; 2 also missing publication year; 1 with non-standard author truncation; 1 unused).

Figures and Tables 1 issue

Figures Present

2 figures cited in text (Figure 1, Figure 2); 2 embedded figure objects confirmed present in the file, matching the number of distinct figures cited.

Tables Present

1 table found (Table 1: Comparison of Traditional Models and AI Approaches), cited in text.

Minimal Captions Warning

Figure 1 ('Introduction.') and Figure 2 ('Drug Dissolution and Drug Release Mechanisms.') captions are extremely brief and do not describe figure content.

Suggestion: Expand figure captions to describe what each figure actually depicts.

Abbreviations No issues

Abbreviations Present

ADME: Absorption, Distribution, Metabolism, and Excretion; AI: Artificial Intelligence; ANN: Artificial Neural Networks; CRDDS: Controlled-Release Drug Delivery Systems; CYP450: Cytochrome P450; DL: Deep Learning; DNN: Deep Neural Networks; IoT: Internet of Things; IVIVC: In vitro-In vivo Correlation; ML: Machine Learning; PAMPA: Parallel Artificial Membrane Permeability Assay; PBPK: Physiologically Based Pharmacokinetics; QbD: Quality by Design; RF: Random Forest; SVM: Support Vector Machines.

Scientific Names No issues

Scientific Names Present

No scientific/organism names detected in the manuscript text.

APA 7 Compliance 2 issues

In-text Citations Warning

Generally consistent with APA 7 author-date format; all in-text citations resolve to a reference-list entry. Minor ambiguity exists between 'Mishra et al., 2025' (A. Mishra) and 'Mishra and Dasari, 2025' (N. Mishra) since both share the surname Mishra and year 2025.

Reference List Warning

Formatted largely in APA 7 style, but all 14 entries lack DOIs, two entries (Aulton, Martin) lack publication years, and one entry (Serrano et al.) truncates the author list non-standardly.

Component checklist

6 issues

Article Type Present

Location: Manuscript header

Running Title Present

Location: Header (<RH> tag)

Manuscript Title Present

Location: Title page

Author Names & Affiliations Present

Location: Title page

Corresponding Author Details Present

Location: Title page - Correspondence block

Abstract Warning

Location: Abstract section

Keywords Present

Location: After abstract

Graphical Abstract Missing

Introduction Present

Location: Introduction section

Materials and Methods / Review Methodology Missing

Results/Discussion (Applications sections) Present

Location: Applications of AI in Predicting Drug Release / Absorption Kinetics sections

Conclusion Present

Location: Conclusion section

Acknowledgements Missing

Conflict of Interest Present

Location: Conflict of Interest section

Funding Statement Missing

Author Contributions Missing

Abbreviations Present

Location: Abbreviations section

References Present

Location: References section

Tables Present

Location: Table 1

Figures Present

Location: Figure 1, Figure 2

Citation cross-check

1 issue

The reference list and in-text citations are largely well-aligned, with all in-text author-date citations resolving to a confidently matching reference-list entry and no orphaned or year-mismatched citations detected. One reference (Korsmeyer et al., 1983) is never cited in-text, despite the manuscript containing a dedicated subsection on the Korsmeyer-Peppas model that instead cites undated textbook sources (Aulton, n.d.; Martin, n.d.). No duplicate reference entries were found. A minor ambiguity exists between two same-year, same-surname 'Mishra' citations that are distinguished only by citation form (et al. vs. named co-author), which is technically resolvable but could be clarified with initials. Overall citation-reference integrity is good, with the main outstanding item being the unused Korsmeyer et al. (1983) reference.

Listed but never cited

Warning

Korsmeyer, R. W., Gurny, R., Doelker, E., Buri, P., & Peppas, N. A. (1983). Mechanisms of solute release from porous hydrophilic polymers. International Journal of Pharmaceutics, 15(1), 25-35.

Suggestion: Possible location: Fundamentals of Drug Release and Absorption Kinetics, Korsmeyer-Peppas Model subsection — This subsection discusses the Korsmeyer-Peppas model in detail but cites (Aulton, n.d., Martin, n.d.) instead of the original Korsmeyer et al. (1983) paper, which is the foundational source for this exact model.

Reference issues

14 issues

Ref 1

Warning

Missing DOI DOI: exact.

Suggestion: Corrected: Alum, E. U., & Ugwu, O. P. C. (2025). Artificial intelligence in personalized medicine: Transforming diagnosis and treatment. Discover Applied Sciences, 7(3), 193. [DOI: missing]

Ref 2

Warning

Publication year missing DOI: exact.

Suggestion: Corrected: Aulton, M. E. (Ed.). (n.d.). Aulton's pharmaceutics: The design and manufacture of medicines. Churchill Livingstone. [Note: incomplete source details - publication year missing]

Ref 3

Missing

Missing DOI DOI: missing.

Suggestion: Corrected: Higuchi, T. (1961). Rate of release of medicaments from ointment bases containing drugs in suspension. Journal of Pharmaceutical Sciences, 50(10), 874-875. [DOI: missing]

Ref 4

Warning

Missing DOI DOI: exact.

Suggestion: Corrected: Higuchi, T. (1963). Mechanism of sustained-action medication. Journal of Pharmaceutical Sciences, 52(12), 1145-1149. [DOI: missing]

Ref 5

Warning

Missing DOI; issue number formatting normalized DOI: exact.

Suggestion: Corrected: Jena, G. K., Patra, C. N., Jammula, S., Rana, R., & Chand, S. (2024). Artificial intelligence and machine learning implemented drug delivery systems: A paradigm shift in the pharmaceutical industry. Journal of Bio-X Research, 7(4), 0016. [DOI: missing]

Ref 6

Missing

Missing DOI DOI: missing.

Suggestion: Corrected: Khalifa, N. E. (2025). The role of artificial intelligence in the development of modern drug delivery systems. Asian Journal of Pharmaceutical Research and Health Care, 17(2), 117-123. [DOI: missing]

Ref 7

Missing

Missing DOI; reference not cited anywhere in-text DOI: missing.

Suggestion: Corrected: Korsmeyer, R. W., Gurny, R., Doelker, E., Buri, P., & Peppas, N. A. (1983). Mechanisms of solute release from porous hydrophilic polymers. International Journal of Pharmaceutics, 15(1), 25-35. [DOI: missing]

Ref 8 Warning

Publication year missing DOI: exact.

Suggestion: Corrected: Martin, A. N. (n.d.). Martin's physical pharmacy and pharmaceutical sciences. Lippincott Williams & Wilkins. [Note: incomplete source details - publication year missing]

Ref 9 Missing

Missing DOI DOI: missing.

Suggestion: Corrected: Mishra, A., Majumder, A., Kommineni, D., Joseph, C. A., Chowdhury, T., & Anumula, S. K. (2025). Role of generative artificial intelligence in personalized medicine: A systematic review. Cureus, 17(4), e82310. [DOI: missing]

Ref 10 Warning

Missing DOI DOI: exact.

Suggestion: Corrected: Mishra, N., & Dasari, A. (2025). Artificial intelligence and 3D printing in pharmaceuticals: A new frontier in personalized drug manufacturing. International Journal of Pharmacy and Pharmaceutical Sciences, 7(2), 15-22. [DOI: missing]

Ref 11 Missing

Missing DOI DOI: missing.

Suggestion: Corrected: Panchpuri, M., Painuli, R., & Kumar, C. (2025). Artificial intelligence in smart drug delivery systems: A step toward personalized medicine. RSC Pharmaceutics, 2(5), 882-914. [DOI: missing]

Ref 12 Warning

Author list truncated with non-standard 'et al.' inside the entry; missing DOI DOI: exact.

Suggestion: Corrected: Serrano, D. R., Luciano, F. C., Anaya, B. J., Ongoren, B., Kara, A., Molina, G., et al. (2024). Artificial intelligence applications in drug discovery and drug delivery: Revolutionizing personalized medicine. Pharmaceutics, 16(10), 1328. [DOI: missing] [Note: incomplete source details - full author list not provided]

Ref 13 Warning

Missing DOI; conference details incomplete DOI: likely.

Suggestion: Corrected: Shao, X. (2023). Integration of intelligent drug systems and personalized medicine: Applications and prospects. Proceedings of ISAIMS, 1-5. [DOI: missing]

Ref 14 Missing

Missing DOI DOI: missing.

Suggestion: Corrected: Suksaeree, J. (2025). A review of artificial intelligence-driven smart and sustainable drug delivery systems: A dual-framework roadmap for the next pharmaceutical paradigm. Sciences, 7(4), 179. [DOI: missing]

Figures and tables

2 issues

Figure 1 Warning

Legend: present · Cited in text: yes · Legend ('Introduction.') is not descriptive of figure content; consider expanding.

Figure 2 Warning

Legend: present · Cited in text: yes · Legend ('Drug Dissolution and Drug Release Mechanisms.') is not descriptive of figure content; consider expanding.

Table 1 Present

Legend: present · Cited in text: yes

Spelling

2 issues

Ai → AI Warning

Heading before 'Applications of AI in Predicting Absorption Kinetics' · “Applications Of Ai In Predicting Absorption Kinetics”

equations Instead → equations. Instead Warning

Diffusion-Controlled Drug Release, paragraph 1 · “cannot be accurately represented by conventional diffusion equations Instead of relying solely on Fickian”

Author queries

AQ1

[Query: Please provide DOIs for all 14 references, where available, to complete the reference list.]

AQ2

[Query: The publication years for the Aulton's Pharmaceutics and Martin's Physical Pharmacy textbook references are missing. Please provide the correct edition and year for each.]

AQ3

[Query: The Serrano et al. (2024) reference truncates the author list with 'et al.' Please provide the complete author list or confirm APA 7 ellipsis formatting is acceptable.]

AQ4

[Query: No Author Contributions statement was found. Please provide a statement detailing each author's individual contribution to the manuscript.]

AQ5

[Query: No Funding statement was found. Please provide funding source information or confirm that no funding was received.]

AQ6

[Query: No graphical abstract was found. Please confirm whether one is required by the target journal and provide it if so.]

AQ7

[Query: The abstract is structured (Background, Objectives, Materials and Methods, Results, Conclusion), which is atypical for a Review Article. Please confirm this format matches the target journal's requirements for Review Articles.]

AQ8

[Query: Figure 1 and Figure 2 captions ('Introduction.' and 'Drug Dissolution and Drug Release Mechanisms.') are very brief. Please provide more descriptive figure legends explaining what each figure depicts.]

AQ9

[Query: The reference Korsmeyer et al. (1983) is listed but never cited in-text. Please confirm if this citation was intended in the Korsmeyer-Peppas Model subsection, or remove it from the reference list.]

Converted reference list (APA 7)

1. Alum, E. U., & Ugwu, O. P. C. (2025). Artificial intelligence in personalized medicine: Transforming diagnosis and treatment. Discover Applied Sciences, 7(3), 193. https://doi.org/10.1007/s42452-025-06625-x [✓ CrossRef Verified] [PMID: 42291376]
2. Aulton, M. E. (Ed.). (n.d.). Aulton's pharmaceutics: The design and manufacture of medicines. Churchill Livingstone. [Note: incomplete source details - publication year missing] [DOI: missing]
3. Higuchi, T. (1961). Rate of release of medicaments from ointment bases containing drugs in suspension. Journal of Pharmaceutical Sciences, 50(10), 874-875. https://doi.org/10.1002/jps.2600501018 [✓ CrossRef Verified] [PMID: 1218459]
4. Higuchi, T. (1963). Mechanism of sustained-action medication. Journal of Pharmaceutical Sciences, 52(12), 1145-1149. [DOI: missing] [PMID: 14088963]
5. Jena, G. K., Patra, C. N., Jammula, S., Rana, R., & Chand, S. (2024). Artificial intelligence and machine learning implemented drug delivery systems: A paradigm shift in the pharmaceutical industry. Journal of Bio-X Research, 7(4), 0016. https://doi.org/10.34133/jbioxresearch.0016 [✓ CrossRef Verified]

6. Khalifa, N. E. (2025). The role of artificial intelligence in the development of modern drug delivery systems. Asian Journal of Pharmaceutical Research and Health Care, 17(2), 117-123. https://doi.org/10.4103/ajprhc.ajprhc_68_25 [✓ CrossRef Verified]
7. Korsmeyer, R. W., Gurny, R., Doelker, E., Buri, P., & Peppas, N. A. (1983). Mechanisms of solute release from porous hydrophilic polymers. International Journal of Pharmaceutics, 15(1), 25-35. [DOI: lookup failed]
8. Martin, A. N. (n.d.). Martin's physical pharmacy and pharmaceutical sciences. Lippincott Williams & Wilkins. [Note: incomplete source details - publication year missing] [DOI: missing]
9. Mishra, A., Majumder, A., Kommineni, D., Joseph, C. A., Chowdhury, T., & Anumula, S. K. (2025). Role of generative artificial intelligence in personalized medicine: A systematic review. Cureus, 17(4), e82310. https://doi.org/10.7759/cureus.82310 [✓ CrossRef Verified]
10. Mishra, N., & Dasari, A. (2025). Artificial intelligence and 3D printing in pharmaceuticals: A new frontier in personalized drug manufacturing. International Journal of Pharmacy and Pharmaceutical Sciences, 7(2), 15-22. [DOI: lookup failed]
11. Panchpuri, M., Painuli, R., & Kumar, C. (2025). Artificial intelligence in smart drug delivery systems: A step toward personalized medicine. RSC Pharmaceutics, 2(5), 882-914. https://doi.org/10.1039/d5pm00089k [✓ CrossRef Verified]
12. Serrano, D. R., Luciano, F. C., Anaya, B. J., Ongoren, B., Kara, A., Molina, G., et al. (2024). Artificial intelligence applications in drug discovery and drug delivery: Revolutionizing personalized medicine. Pharmaceutics, 16(10), 1328. [DOI: lookup failed] [Note: incomplete source details - full author list not provided]
13. Shao, X. (2023). Integration of intelligent drug systems and personalized medicine: Applications and prospects. Proceedings of ISAIMS, 1-5. https://doi.org/10.1145/3644116.3644344 [✓ CrossRef Verified]
14. Suksaeree, J. (2025). A review of artificial intelligence-driven smart and sustainable drug delivery systems: A dual-framework roadmap for the next pharmaceutical paradigm. Sciences, 7(4), 179. https://doi.org/10.3390/sci7040179 [✓ CrossRef Verified]

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