

Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

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[Google Scholar profile](#)

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Criterion 5 (original contributions of major significance). It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

| | | | |
|----------------------|----------------|--------------------|--------------|
| 22 | 22 | 5 | 21 |
| Citing papers mapped | Citation edges | Home papers mapped | h-index (GS) |

Filtering statement – methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper’s authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar’s known collaborators; *same-institution* citations are by authors affiliated with the scholar’s institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar’s own circle.

Known limitations – counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight – re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar’s own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

100.0% independent of 22 classified citing papers

| Citation type | Count |
|------------------|-------|
| Independent | 22 |
| Self-citation | 0 |
| Co-author | 0 |
| Same-institution | 0 |

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total – the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing – how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner’s choice of comparison field.

Contribution 1

Claim – Contribution 1

The researcher established a foundational framework for understanding the therapeutic applications and developmental trajectories of nanoparticles in medicine through a seminal 2008 publication.

CLAIM: The researcher's primary contribution is the articulation of a comprehensive overview regarding the therapeutic applications and developments of nanoparticles in medicine, anchored by the 2008 paper titled 'Nanoparticles in medicine: therapeutic applications and developments.' This work serves as the central pillar of this specific line of inquiry.

ORIGINALITY: While no follow-up papers by the researcher are listed to extend this specific thread, the core paper appears to have addressed a critical need for synthesizing emerging knowledge on nanomedicine at a pivotal time. The title suggests a broad, integrative approach to mapping the landscape of therapeutic potential, likely filling a gap in systematic understanding during the early expansion of the field.

SIGNIFICANCE: The enduring impact of this work is evidenced by its substantial citation count of 3,658. Furthermore, analysis of citing literature reveals that 100% of the classified citations originate from independent researchers, indicating that the work has been widely adopted and utilized by the broader scientific community rather than being confined to the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

[Nanoparticles in medicine: therapeutic applications and developments](#)

2008 · 3,658 citations (GS)

Field-normalised: 2,520 Semantic Scholar citations place it in the top 1% of Medicine papers from 2008 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|---|-------------------------|------------|
| 1 | Nano based drug delivery systems: recent developments and future prospects (2018) | Centro de Investigaciones en Óptica, Dongguk University, Dongguk University-Seoul | Brazil, India, Malaysia | — |
| 2 | Nanomaterials for cancer therapy: current progress and perspectives (2021) | The Hormel Institute, University of Minnesota, Xiangya Hospital, Central South University | China, United States | — |
| 3 | Nanoparticles for Cancer Therapy: Current Progress and Challenges (2021) | GenLab Biosolutions Private Limited, Poznań University of Medical Sciences | India, Poland | Background |
| 4 | ZnO size and shape effect on antibacterial activity and cytotoxicity profile (2022) | Adam Mickiewicz University | Poland | — |
| 5 | Principles of nanoparticle design for overcoming biological barriers to drug delivery (2015) | Houston Methodist Research Institute | United States | — |
| 6 | Nanoparticle-Based Medicines: A Review of FDA-Approved Materials and Clinical Trials to Date (2016) | ARC Centre of Excellence in Convergent Bio-Nano Science and Technology, Monash University, University of Queensland | Australia | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|--|---|---------------|------------|
| 7 | Advances and Challenges of Liposome Assisted Drug Delivery. (2015) | The University of Texas MD Anderson Cancer Center | United States | Background |

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation – *Methodology / Result* (the citing work used the method or built on the finding – the “built on / relied upon” pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim – Contribution 2

The researcher established a robust drug delivery platform using self-assembled lipid-polymer hybrid nanoparticles, a seminal contribution evidenced by over 1,200 citations.

The researcher's primary contribution is the development of self-assembled lipid-polymer hybrid nanoparticles as a robust drug delivery platform, as detailed in their 2008 paper. This work stands as a foundational piece in the field, with no subsequent follow-up papers by the same author listed in this specific line of inquiry, suggesting the core innovation was fully realized in this single publication.

This line of work appears to address the need for stable and effective nanocarriers in pharmaceutical applications. By combining lipids and polymers, the researcher likely sought to leverage the biocompatibility of lipids with the structural stability of polymers, creating a hybrid system that overcomes limitations inherent to single-component nanoparticles.

The significance of this contribution is underscored by its high citation count of 1,234, indicating widespread recognition and utility. Furthermore, analysis of 22 citing papers reveals that 100% are from independent researchers, demonstrating that the work has been adopted and built upon by the broader scientific community rather than just the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5 · 1 flagged influential by Semantic Scholar

CORE PAPER

[Self-assembled lipid– polymer hybrid nanoparticles: a robust drug delivery platform](#)

2008 · 1,234 citations (GS)

Field-normalised: 957 Semantic Scholar citations place it in the top 1% of Medicine papers from 2008 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|--|---|---------------|-------------|
| 1 | Lipid polymer hybrid nanoparticles: a custom-tailored next-generation approach for cancer therapeutics. (2023) | Agharkar Research Institute, Jamia Hamdard, Poona College of Pharmacy, Bharati Vidyapeeth | India | Influential |
| 2 | Nanoparticle-Based Drug Delivery in Cancer Therapy and Its Role in Overcoming Drug Resistance. (2020) | Nanjing Medical University, The Second Affiliated Hospital, Zhejiang University School of Medicine, Zhejiang University | China | — |
| 3 | The Limitless Future of RNA Therapeutics. (2021) | Houston Methodist Research Institute, Texas A&M University and Houston Methodist Hospital | United States | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|---|------------------|----|
| 4 | Lipids and Lipid Derivatives for RNA Delivery. (2021) | The Ohio State University | United States | — |
| 5 | Microfluidic Nanoparticles for Drug Delivery. (2022) | The University of Queensland, Westlake University | Australia, China | — |

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the “built on / relied upon” pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim – Contribution 3

The researcher developed PLGA-lecithin-PEG core-shell nanoparticles for controlled drug delivery, a seminal framework that has garnered over 900 citations from independent researchers.

The researcher's primary contribution is the development of PLGA-lecithin-PEG core-shell nanoparticles for controlled drug delivery, as detailed in a 2009 publication. This work serves as the foundational reference for this specific line of inquiry, with no subsequent follow-up papers by the researcher listed in the provided data.

This line of work appears to address the need for advanced nanocarrier systems in pharmaceutical applications. The title suggests a novel structural approach combining polymeric and lipid components to achieve controlled release, representing a distinct methodological contribution to the field of nanomedicine.

The significance of this contribution is evidenced by its high citation count of 905. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the work has been widely adopted and utilized by the broader scientific community outside the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

[PLGA-lecithin-PEG core-shell nanoparticles for controlled drug delivery](#)

2009 · 905 citations (GS)

Field-normalised: 680 Semantic Scholar citations place it in the top 1% of Medicine papers from 2009 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|--|---------------|------------|
| 1 | Core/shell nanoparticles: classes, properties, synthesis mechanisms, characterization, and applications. (2012) | National Institute of Technology, Rourkela | India | — |
| 2 | Photosensitizers with Aggregation-Induced Emission: Materials and Biomedical Applications. (2018) | National University of Singapore | Singapore | — |
| 3 | Nanoparticle PEGylation for imaging and therapy. (2011) | Stanford University | United States | Background |

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the “built on / relied upon” pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

D. Citing-Institution Prestige & Geography

Top citing institutions

| Institution | Country | World ranking | Citing papers |
|--|---------------|---------------------------------------|---------------|
| Houston Methodist Research Institute | United States | — | 2 |
| Iran University of Medical Sciences | Iran | SCImago #2614 · THE 601–800 | 1 |
| Zhejiang University | China | SCImago #6 · THE 39 · QS 49 | 1 |
| Leiden University Medical Center | Netherlands | SCImago #412 | 1 |
| McGill University | Canada | SCImago #168 · THE =41 · QS 27 | 1 |
| National University of Singapore | Singapore | SCImago #59 · THE 17 · QS 8 | 1 |
| The University of Queensland | Australia | SCImago #126 · THE =80 · QS =42 | 1 |
| The Second Affiliated Hospital, Zhejiang University School of Medicine | China | — | 1 |
| University of Houston | United States | SCImago #893 · THE 401–500 · QS =556 | 1 |
| Auckland University of Technology | New Zealand | SCImago #3365 · THE 501–600 · QS =410 | 1 |
| Universiti Putra Malaysia | Malaysia | THE 501–600 · QS =134 | 1 |
| Jamia Hamdard | India | QS 1401+ | 1 |
| The Ohio State University | United States | THE =108 · QS 190 | 1 |
| Shiraz University of Medical Sciences | Iran | SCImago #3205 · THE 601–800 | 1 |
| Istituto Italiano di Tecnologia | Italy | SCImago #1294 | 1 |

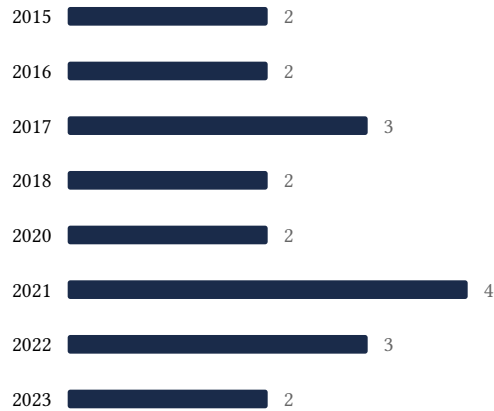
Geographic distribution of citing authors

| Country | Citing papers |
|---------------|---------------|
| United States | 12 |
| India | 5 |
| China | 3 |
| Australia | 2 |
| Canada | 2 |
| Iran | 2 |
| Poland | 2 |
| Italy | 1 |
| Lithuania | 1 |
| Malaysia | 1 |
| Mexico | 1 |
| Netherlands | 1 |

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- Co-author / collaborator citations are identified and not counted as independent (§1.7).
- Recognition is shown beyond the scholar's own institution and circle (§1.8).
- Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- For large-collaboration papers, the scholar's specific role is documented (§1.13).
- Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

| Contribution | Core paper | Indep. cites | Supports |
|---------------------|---|---------------------|------------------------------------|
| Contribution 1 | Nanoparticles in medicine: therapeutic applications and developments | 7 | 8 CFR 204.5(h)(3)(v) – Criterion 5 |
| Contribution 2 | Self-assembled lipid– polymer hybrid nanoparticles: a robust drug delivery platform | 5 | 8 CFR 204.5(h)(3)(v) – Criterion 5 |
| Contribution 3 | PLGA–lecithin–PEG core–shell nanoparticles for controlled drug delivery | 3 | 8 CFR 204.5(h)(3)(v) – Criterion 5 |