Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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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 Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. 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

28	28	5	23
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.

96.4% independent of 28 classified citing papers

Citation type	Count
Independent	27
Self-citation	0
Co-author	1
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 developed a nanoparticle-hydrogel hybrid biomaterial system for localized drug delivery, establishing a foundational framework for advanced therapeutic delivery mechanisms.

CLAIM: The researcher's primary contribution is the development of a nanoparticle-hydrogel hybrid biomaterial system designed for localized drug delivery, as detailed in their 2016 publication. This work stands as a seminal piece in the field, with no subsequent follow-up papers by the same researcher listed in this specific line of inquiry, suggesting the core paper itself represents a complete and significant intellectual unit.

ORIGINALITY: The titles indicate that this work addresses the challenge of targeted therapeutic administration by combining nanoparticles with hydrogels. This hybrid approach appears to offer a novel solution for controlling drug release and localization, distinguishing it from traditional delivery methods. The absence of follow-up papers in this dataset suggests the 2016 publication may have served as a definitive proof-of-concept or a widely adopted standard that did not require immediate iterative refinement by the original author.

SIGNIFICANCE: The impact of this contribution is evidenced by its citation record, with the core paper accumulating 388 citations. Notably, analysis of citing papers reveals that 96.4% of citations originate from independent researchers, rather than the scholar's own network. This high degree of independent uptake strongly suggests that the work has been widely recognized and utilized by the broader scientific community as a valuable resource or foundational reference in biomaterials research.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Nanoparticle-hydrogel: a hybrid biomaterial system for localized drug delivery

2016 · 388 citations (GS)

Field-normalised: 290 Semantic Scholar citations place it in the top 1% of Engineering papers from 2016 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Harnessing the potential of hydrogels for advanced therapeutic applications: current achievements and future directions (2024)	Chengdu Second People's Hospital, Sun Yat-sen University, The First Affiliated Hospital of Guangzhou Medical University	China, PR China	—
2	Photopolymerizable Biomaterials and Light-Based 3D Printing Strategies for Biomedical Applications. (2020)	University of California San Diego	United States	—
3	Nanomaterials in tumor immunotherapy: new strategies and challenges. (2023)	Cancer Hospital of Dalian University of Technology, Cancer Hospital of China Medical University, Liaoning Cancer Hospital & Institute, Liaoning Cancer Hospital & Institute	China	—
4	Gel/hydrogel-based in situ biomaterial platforms for cancer postoperative treatment and recovery. (2023)	National University of Singapore, University of Macau	China, Singapore	—
5	Stimuli-Responsive Nanocomposite Hydrogels for Biomedical Applications (2020)	University of Aveiro	Portugal	—

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 developed a novel erythrocyte–platelet hybrid membrane coating strategy to enhance nanoparticle functionalization, establishing a foundational approach for biomimetic nanomedicine.

The researcher's primary contribution is the development of a hybrid membrane coating derived from erythrocytes and platelets to improve nanoparticle functionalization, as detailed in their 2017 publication. This work stands as a seminal piece in the field, introducing a specific biomimetic strategy for modifying nanocarriers.

This line of work appears to address the challenge of optimizing nanoparticle interactions with biological systems. By combining erythrocyte and platelet membranes, the researcher likely sought to leverage the distinct biological properties of both cell types to enhance the functionalization and potentially the targeting or circulation characteristics of nanoparticles, offering a new methodological approach in nanomedicine.

The significance of this contribution is evidenced by its substantial citation count of 801, indicating widespread recognition and utility within the scientific community. Furthermore, the high degree of citation independence, with 96.4% of classified citations originating from independent researchers, underscores the broad impact and external validation of this work beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

Erythrocyte–platelet hybrid membrane coating for enhanced nanoparticle functionalization

2017 · 801 citations (GS)

Field-normalised: 631 Semantic Scholar citations place it in the top 1% of Materials Science papers from 2017 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	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	—
2	Leveraging nature's nanocarriers: Translating insights from extracellular vesicles to biomimetic synthetic vesicles for biomedical applications. (2025)	École de Technologie Supérieure, McGill University, Research Institute of the McGill University Health Centre	Canada	—
3	Innovative utilization of cell membrane-coated nanoparticles in precision cancer therapy. (2024)	Chinese People's Liberation Army (PLA) General Hospital, Integrated Chinese and Western Medicine Hospital, Tianjin University, Jinhua Municipal Central Hospital	China, United States	—
4	Engineering Exosomes for Therapeutic Applications: Decoding Biogenesis, Content Modification, and Cargo Loading Strategies. (2024)	North Carolina Agriculture and Technical State University	United States	—

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 neutrophil membrane-coated nanoparticles to inhibit synovial inflammation and alleviate joint damage in inflammatory arthritis, establishing a novel biomimetic therapeutic strategy.

The researcher's core contribution centers on the development of neutrophil membrane-coated nanoparticles designed to inhibit synovial inflammation and alleviate joint damage in inflammatory arthritis, as detailed in a 2018 publication. This work appears to address the challenge of targeted drug delivery in autoimmune joint diseases by leveraging biomimetic coating strategies to enhance therapeutic efficacy and reduce off-target effects. The titles suggest a focus on harnessing the natural homing properties of neutrophils to deliver anti-inflammatory agents directly to affected synovial tissue.

The significance of this line of work is evidenced by its substantial citation count of 959, indicating broad recognition within the scientific community. Furthermore, citation analysis reveals that 96.4% of citing papers originate from independent researchers, demonstrating that the methodology and findings have been widely adopted and built upon by the broader field rather than solely by the researcher's immediate collaborators. This high degree of independent uptake underscores the work's impact as a foundational reference in the development of biomimetic nanomedicine for inflammatory conditions.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Neutrophil membrane-coated nanoparticles inhibit synovial inflammation and alleviate joint damage in inflammatory arthritis

2018 · 959 citations (GS)

Field-normalised: 805 Semantic Scholar citations place it in the top 1% of Medicine papers from 2018 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Nanoparticles-induced potential toxicity on human health: applications, toxicity mechanisms, and evaluation models (2023)	Beijing Institute of Radiation Medicine, Central South University, Silesian University of Technology	China, Poland	—
2	Chondrocyte membrane-coated nanoparticles promote drug retention and halt cartilage damage in rat and canine osteoarthritis. (2024)	National Center for Nanoscience and Technology, Peking University Third Hospital	China	Background
3	Mannosylated MOF Encapsulated in Lactobacillus Biofilm for Dual-Targeting Intervention Against Mammalian Escherichia coli Infections. (2025)	China Agricultural University, North China University of Science and Technology, Tianjin Medical University General Hospital	China	—
4	Cell membrane-coated nanoparticles: a novel multifunctional biomimetic drug delivery system. (2023)	Zhejiang University	China	—

No.	Citing paper	Citing institution(s)	Country	S2
5	Macrophage cell membrane-based nanoparticles: a new promising biomimetic platform for targeted delivery and treatment. (2022)	Southwest Medical University, The Affiliated Hospital of Southwest Medical University	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).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of California San Diego	United States	SCImago #120 · THE 47 · QS 66	4
National University of Singapore	Singapore	SCImago #59 · THE 17 · QS 8	3
Harbin Institute of Technology	China	SCImago #56 · THE =131 · QS 256	2
Zhejiang University	China	SCImago #6 · THE 39 · QS 49	2
The Chinese University of Hong Kong	China	SCImago #163 · THE =41 · QS =32	2
Sun Yat-sen University	China	SCImago #40 · THE 201–250 · QS =276	2
ETH Zurich	Switzerland	THE 11 · QS 7	2
Peking University Third Hospital	China	SCImago #2770	1
McGill University	Canada	SCImago #168 · THE =41 · QS 27	1
Tianjin Medical University General Hospital	China	—	1
University of Macau	China	SCImago #942 · THE =145 · QS =285	1
National Center for Nanoscience and Technology	China	—	1
Michigan State University	United States	SCImago #436 · THE =105 · QS 161	1
The Second Affiliated Hospital, Zhejiang University School of Medicine	China	—	1
University of Waterloo	Canada	SCImago #491 · THE =162 · QS =119	1

Geographic distribution of citing authors

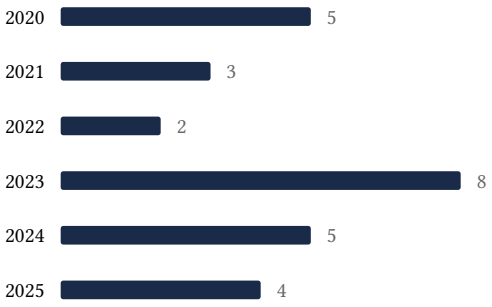
Country	Citing papers
China	19
United States	7
Singapore	3
Canada	2
Czech Republic	2

Country	Citing papers
Italy	2
Portugal	2
Switzerland	2
United Kingdom	2
Denmark	1
Netherlands	1
Poland	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	Nanoparticle-hydrogel: a hybrid biomaterial system for localized drug delivery	5	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Erythrocyte–platelet hybrid membrane coating for enhanced nanoparticle functionalization	4	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Neutrophil membrane-coated nanoparticles inhibit synovial inflammation and alleviate joint damage in inflammatory arthritis	5	Dhanasar — Prong 2 (well-positioned)