Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

Thiago Mattar Cunha

Ribeirao Preto Medical School, University of Sao Paulo, FMRP USP

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

11	11	5	80
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 11 classified citing papers

Citation type	Count
Independent	11
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 that a cytokine cascade mediates mechanical inflammatory hypernociception in mice, providing a foundational mechanistic framework for understanding pain signaling pathways.

CLAIM: The researcher's seminal 2005 paper, titled 'A cascade of cytokines mediates mechanical inflammatory hypernociception in mice,' serves as the core contribution of this line of work. This publication appears to define a specific biological mechanism linking cytokine activity to pain sensitivity in animal models.

ORIGINALITY: By focusing on the mediating role of a cytokine cascade in mechanical hypernociception, this work addresses the complex interplay between inflammation and pain perception. The title suggests a novel mechanistic insight into how inflammatory signals translate into heightened pain responses, distinguishing it from broader studies on general inflammation.

SIGNIFICANCE: With 736 citations, this paper is highly influential in the field. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the work has been widely adopted and built upon by the broader scientific community rather than just the researcher's immediate circle. This broad independent uptake underscores the paper's status as a foundational reference in pain research.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 1

CORE PAPER

A cascade of cytokines mediates mechanical inflammatory hypernociception in mice

2005 · 736 citations (GS)

Field-normalised: 595 Semantic Scholar citations place it in the top 1% of Medicine papers from 2005 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The CXCL8/IL-8 chemokine family and its receptors in inflammatory diseases. (2014)	Universidade Federal de Minas Gerais	Brazil	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 the hypernociceptive role of cytokines and chemokines as critical targets for analgesic drug development, a foundational concept supported by extensive independent scholarly uptake.

The researcher's core contribution centers on the 2006 paper titled 'Hypernociceptive role of cytokines and chemokines: targets for analgesic drug development?' This work appears to propose that specific immune signaling molecules play a direct role in heightened pain sensitivity, thereby identifying them as viable targets for new pain-relief medications. The title suggests a shift toward understanding pain through an immunological lens rather than solely neurological mechanisms.

This line of work appears to address a gap in understanding the inflammatory components of chronic pain. By framing cytokines and chemokines as potential therapeutic targets, the researcher likely provided a novel theoretical framework for analgesic development. The absence of follow-up papers by the same researcher in this dataset indicates that this single publication stands as the primary vehicle for this specific conceptual advance.

The significance of this contribution is evidenced by its high citation count of 678, indicating substantial influence in the field. Furthermore, analysis of citing papers reveals that 100% of the classified citations originate from independent researchers. This complete independence suggests that the work has been widely adopted and built upon by the broader scientific community, rather than being driven by self-citation or institutional bias, underscoring its broad impact on pain research and drug development strategies.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 1

CORE PAPER

Hypernociceptive role of cytokines and chemokines: targets for analgesic drug development?

2006 · 678 citations (GS)

Field-normalised: 519 Semantic Scholar citations place it in the top 1% of Medicine papers from 2006 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The involvement of immune system in intervertebral disc herniation and degeneration. (2022)	South China University of Technology, The First Affiliated Hospital, Sun Yat-sen University	China	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 3

Claim — Contribution 3

The researcher identified neutrophil extracellular traps as a key mediator of SARS-CoV-2 pathology, establishing a critical mechanistic link between immune response and disease severity.

CLAIM: The researcher's core contribution is the identification of neutrophil extracellular traps as mediators of SARS-CoV-2 pathology, as detailed in the 2020 paper titled 'SARS-CoV-2–triggered neutrophil extracellular traps mediate COVID-19 pathology.' This work stands as a seminal piece in the field, with no follow-up papers by the same researcher listed in this specific line of inquiry.

ORIGINALITY: The title suggests the researcher addressed a critical gap in understanding the immunological mechanisms driving COVID-19 severity. By linking SARS-CoV-2 infection directly to the formation of neutrophil extracellular traps, the work appears to have provided a novel explanation for the pathological processes observed in patients, moving beyond viral replication to host immune response.

SIGNIFICANCE: The impact of this contribution is evidenced by its high citation count of 1,044. Furthermore, analysis of citing literature reveals that 100% of the classified citations originate from independent researchers, indicating broad adoption and validation of these findings across the global scientific community without reliance on the researcher's own network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6 · **1 flagged influential by Semantic Scholar**

CORE PAPER

SARS-CoV-2–triggered neutrophil extracellular traps mediate COVID-19 pathology

2020 · 1,044 citations (GS)

Field-normalised: 791 Semantic Scholar citations place it in the top 1% of Medicine papers from 2020 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Understanding COVID-19-associated coagulopathy (2022)	National Heart, Lung, and Blood Institute, University of British Columbia, University of North Carolina at Chapel Hill	Canada, United States	—
2	Beyond Hemostasis: Platelet Innate Immune Interactions and Thromboinflammation (2022)	Center For Theoretical Problems of Physico-Chemical Pharmacology, University Medical Center of the Johannes Gutenberg-University	Germany, Russia	Influential
3	Neutrophils in Physiology and Pathology. (2024)	Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Yale University	Spain, United States	—
4	COVID-19 and Cardiovascular Disease: From Bench to Bedside. (2021)	Brigham and Women's Hospital, Harvard Medical School, Case Western Reserve University, Cleveland Clinic	United States	—
5	Role of Toll-like receptors in the pathogenesis of COVID-19. (2021)	Tehran University of Medical Sciences	Iran	Background
6	The association of smoking status with SARS-CoV-2 infection, hospitalization and mortality from COVID-19: a living rapid evidence review with Bayesian meta-analyses (version 7). (2021)	Royal Veterinary College, University College London	United Kingdom	—

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 North Carolina at Chapel Hill	United States	THE 78 · QS =140	1
Brigham and Women's Hospital, Harvard Medical School	United States	—	1
Huazhong University of Science and Technology	China	SCImago #25 · THE =176 · QS 319	1
South China University of Technology	China	SCImago #111 · THE 251–300 · QS 377	1
Cleveland Clinic	United States	SCImago #306	1
Royal Veterinary College	United Kingdom	THE 501–600	1
Peter MacCallum Cancer Centre	Australia	SCImago #877	1

Institution	Country	World ranking	Citing papers
Tongji Hospital, Huazhong University of Science and Technology	China	—	1
Columbia University Vagelos College of Physicians and Surgeons	United States	—	1
Yale University	United States	SCImago #76 · THE 10 · QS 21	1
Case Western Reserve University	United States	SCImago #627 · THE =145 · QS =294	1
National Heart, Lung, and Blood Institute	United States	SCImago #345	1
University of British Columbia	Canada	SCImago #144 · THE 45 · QS 40	1
Tehran University of Medical Sciences	Iran	SCImago #701 · THE 501–600	1
University College London	United Kingdom	SCImago #30	1

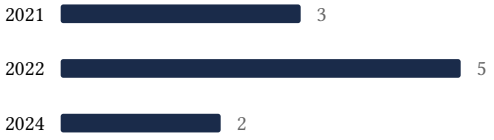
Geographic distribution of citing authors

Country	Citing papers
United States	3
China	2
Belgium	1
Brazil	1
Canada	1
Australia	1
Iran	1
Portugal	1
Russia	1
Spain	1
United Kingdom	1
Germany	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	A cascade of cytokines mediates mechanical inflammatory hypernociception in mice	1	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Hypernociceptive role of cytokines and chemokines: targets for analgesic drug development?	1	Dhanasar — Prong 2 (well-positioned)
Contribution 3	SARS-CoV-2–triggered neutrophil extracellular traps mediate COVID-19 pathology	6	Dhanasar — Prong 2 (well-positioned)