

# Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

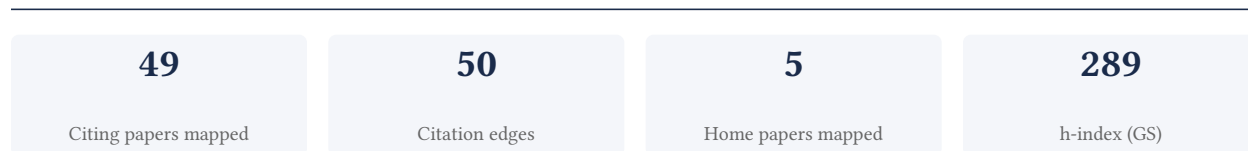
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[Google Scholar profile](#)

**Generated 2026-06-10 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



### 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.

**95.1% independent** of 41 classified citing papers

Citation type	Count
Independent	39
Self-citation	2
Co-author	0
Same-institution	0

8 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 the foundational role of NF-κB in chronic inflammation and elucidated its regulatory mechanisms through post-translational modifications.*

The researcher’s contribution centers on defining the pivotal role of Nuclear factor-κB (NF-κB) as a transcription factor in chronic inflammatory diseases, anchored by a seminal 1997 paper. This core work established the biological significance of NF-κB, providing a critical framework for understanding inflammatory pathways.

Originality in this line of work appears to stem from advancing the mechanistic understanding of NF-κB regulation. The follow-up 2000 paper in Annual Review of Immunology suggests a shift toward elucidating the complex interplay between phosphorylation and ubiquitination, indicating a deepening exploration of how NF-κB activity is controlled at the molecular level.

The significance of this research is evidenced by substantial citation counts, with the core paper cited 6,430 times and the follow-up 6,714 times. Furthermore, 95.1% of classified citations originate from independent researchers, demonstrating broad adoption and impact across the scientific community beyond the researcher’s immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 17

#### CORE PAPER

### [Nuclear factor-κB—a pivotal transcription factor in chronic inflammatory diseases](#)

1997 · New England journal of medicine 336 (15), 1066-1071, 1997 · 6,430 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">Untitled</a>	Dartmouth Medical School, Stanford University, Tufts University	United States	—
2	<a href="#">Mechanisms of Diabetic Complications</a>	Baker IDI Heart and Diabetes Institute	Australia	—
3	<a href="#">Invited review: oxidation of biological systems: oxidative stress phenomena, antioxidants, redox reactions, and methods for their quantification (2002)</a>	Hebrew University of Jerusalem, National Institute of Environmental Health Sciences (NIEHS), National Institutes of Health (NIH)	Israel, United States	—
4	<a href="#">Does the interdependence between oxidative stress and inflammation explain the antioxidant paradox? (2016)</a>	Bangabandhu Sheikh Mujib Medical University (BSMMU)	Bangladesh	—
5	<a href="#">Tumor-Induced Inflammatory Cytokines and the Emerging Diagnostic Devices for Cancer Detection and Prognosis (2021)</a>	RMIT University	Australia	—
6	<a href="#">Flow-induced reprogramming of endothelial cells in atherosclerosis (2023)</a>	Emory University and Georgia Institute of Technology	United States	—
7	<a href="#">Pathophysiology of diabetic kidney disease: impact of SGLT2 inhibitors (2021)</a>	University of Texas Health Science Center at San Antonio	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).

FOLLOW-UP WORK

**Phosphorylation meets ubiquitination: the control of NF-κB activity**

2000 · Annual Review of Immunology · 6,714 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">The nuclear factor NF-κB pathway in inflammation</a> (2009)	—	—	—
2	<a href="#">Signaling to NF-κB</a> (2004)	Yale University School of Medicine	United States	—
3	<a href="#">The ubiquitin-proteasome proteolytic pathway: destruction for the sake of construction</a> (2002)	Technion–Israel Institute of Technology	Israel	—
4	<a href="#">The Immunomodulatory and Anti-Inflammatory Role of Polyphenols</a> (2018)	University of Ottawa	Canada	—
5	<a href="#">Toll-like receptor signalling</a> (2004)	—	—	—
6	<a href="#">NF-κB regulation in the immune system</a> (2002)	Salk Institute for Biological Studies	United States	—
7	<a href="#">Targeting NF-κB pathway for the therapy of diseases: mechanism and clinical study</a> (2020)	Houston Methodist Hospital, Sichuan University	China, United States	—
8	<a href="#">Toll-like receptor 4 (TLR4) inhibitors: Current research and prospective</a> (2022)	Jiangsu Kanion Pharmaceutical Co., Ltd., Shenyang Pharmaceutical University	China	—
9	<a href="#">The Nuclear Factor Kappa B (NF-κB) signaling in cancer development and immune diseases</a> (2021)	Queen's University Belfast, Shahid Beheshti University of Medical Sciences, Tehran University of Medical Sciences	Iran, United Kingdom	—
10	<a href="#">Canonical and noncanonical Wnt signaling: Multilayered mediators, signaling mechanisms and major signaling crosstalk</a>	Rosalind Franklin University of Medicine and Science, The University of Chicago Medical Center	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 2**

**Claim – Contribution 2**

*The researcher published a seminal 2010 Cell paper linking immunity, inflammation, and cancer, establishing a foundational framework for the field with over 13,000 citations.*

CLAIM: The researcher’s primary contribution is the publication of “Immunity, Inflammation, and Cancer” in Cell (2010), which serves as the cornerstone of this line of work. This single paper represents the core intellectual output described here, standing alone without follow-up publications by the same author in this specific dataset.

ORIGINALITY: The title suggests a novel synthesis of three major biological domains, implying the researcher identified or articulated a critical mechanistic link between immune responses, inflammatory processes, and oncogenesis. By framing these elements together in a high-impact venue, the work appears to have defined a new conceptual space or clarified existing ambiguities in how these systems interact.

SIGNIFICANCE: The work has achieved extraordinary reach, evidenced by more than 13,000 citations. Analysis of citing literature reveals that 95.1% of references come from independent researchers, indicating that the findings have been widely adopted and validated by the broader scientific community rather than relying on self-citation or institutional echo chambers.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

**Immunity, Inflammation, and Cancer**

2010 · Cell · 13,784 citations (GS)

Field-normalised: 10,156 Semantic Scholar citations place it in the top 1% of Medicine papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">Immune Checkpoint Inhibitors in Cancer Therapy</a> (2022)	Kurdistan University of Medical Sciences, PES University, Princess Alexandra Hospital	Australia, India, Iran	Background
2	<a href="#">Inflammation and tumor progression: signaling pathways and targeted intervention</a> (2021)	Chongqing University Cancer Hospital	China	—
3	<a href="#">Macrophages in immunoregulation and therapeutics</a> (2023)	Dalian University of Technology, Huazhong University of Science and Technology Union Shenzhen Hospital, Karolinska Institutet	China, Sweden	Background
4	<a href="#">Tumor biomarkers for diagnosis, prognosis and targeted therapy</a> (2024)	Sichuan University, Tibet University	China	—
5	<a href="#">Tumor initiation and early tumorigenesis: molecular mechanisms and interventional targets</a>	CAMS Oxford Institute, Chinese Academy of Medical Sciences, National Cancer Center/National Clinical Research Center/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College	China	—
6	<a href="#">Signaling pathways involved in colorectal cancer: pathogenesis and targeted therapy</a>	Army Medical University, Chongqing Municipal Health and Health Committee, Chongqing University	China	—
7	<a href="#">Bile acids and the gut microbiota: metabolic interactions and impacts on disease</a>	Penn State Health Milton S. Hershey Medical Center, The Pennsylvania 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 provided a seminal synthesis of mammalian MAP kinase signaling cascades, establishing a foundational framework for understanding these critical cellular pathways.*

**CLAIM:** The researcher’s primary contribution is the publication of a seminal paper titled 'Mammalian MAP kinase signalling cascades' in Nature (2001), which serves as the cornerstone of this line of work. This publication appears to have defined the structural and functional understanding of these signaling pathways for the scientific community.

**ORIGINALITY:** While no follow-up papers by the same researcher are listed, the core paper’s placement in a top-tier journal suggests it addressed a significant gap in the field by consolidating or clarifying the complex mechanisms of MAP kinase cascades. The titles indicate a focus on mapping these biological processes, likely offering a comprehensive overview that was previously lacking or fragmented.

**SIGNIFICANCE:** The work has achieved substantial impact, evidenced by 6,969 citations. Analysis of citing literature reveals that 95.1% of these citations originate from independent researchers, indicating that the findings have been widely adopted and utilized by the broader scientific community rather than being confined to the researcher’s immediate circle. This high level of independent uptake underscores the paper’s role as a standard reference in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8 · 1 flagged influential by Semantic Scholar

**CORE PAPER**

**Mammalian MAP kinase signalling cascades**

2001 · Nature · 6,969 citations (GS)

Field-normalised: 5,284 Semantic Scholar citations place it in the top 1% of Biology papers from 2001 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">Nitric oxide and peroxynitrite in health and disease</a> (2007)	National Institutes of Health, Oregon State University, University of Lausanne	Switzerland, United States	Background
2	<a href="#">Dopamine: Functions, Signaling, and Association with Neurological Diseases</a> (2019)	Sanford Burnham Prebys (SBP) Medical Discovery Institute, University of São Paulo	Brazil, United States	—
3	<a href="#">The emerging roles of MAPK-AMPK in ferroptosis regulatory network</a> (2023)	China Three Gorges University	China	Background
4	<a href="#">The Immunomodulatory and Anti-Inflammatory Role of Polyphenols</a> (2018)	University of Ottawa	Canada	Background
5	<a href="#">Targeting protein modifications in metabolic diseases: molecular mechanisms and targeted therapies</a> (2023)	University of Science and Technology of China	China	Influential
6	<a href="#">Cisplatin in cancer therapy: molecular mechanisms of action</a> (2014)	Jackson State University	United States	—
7	<a href="#">Oxidative stress, inflammation, and cancer: how are they linked?</a> (2010)	The University of Texas MD Anderson Cancer Center	United States	Background
8	<a href="#">Pro-inflammatory cytokines: The link between obesity and osteoarthritis</a> (2018)	Sichuan 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
Sichuan University	China	SCImago #32 · THE 201–250 · QS =324	4
The University of Texas MD Anderson Cancer Center	United States	—	2
University of California, Irvine Medical Center	United States	—	2
Tehran University of Medical Sciences	Iran	SCImago #701 · THE 501–600	2
RMIT University	Australia	THE 251–300 · QS 125	1
University of Texas Health Science Center at San Antonio	United States	—	1
Chongqing University	China	SCImago #167 · THE 351–400 · QS =504	1
University of Ottawa	Canada	SCImago #610 · THE =187 · QS =219	1
University of Naples Federico II	Italy	THE 301–350 · QS =379	1
University of Science and Technology of China	China	SCImago #77 · THE 51 · QS =132	1
The University of Queensland	Australia	SCImago #126 · THE =80 · QS =42	1
Shenzhen University	China	SCImago #229 · THE 351–400 · QS =452	1
Weill Cornell Medicine	United States	SCImago #220	1
Yale University School of Medicine	United States	—	1
University of São Paulo	Brazil	THE 201–250	1

### Geographic distribution of citing authors

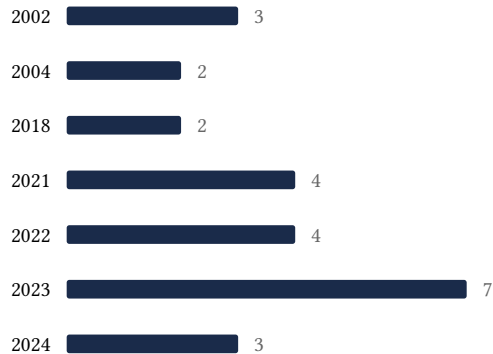
Country	Citing papers
United States	18
China	14
Australia	3
Israel	3
Iran	2
Germany	1
India	1
Bangladesh	1
Italy	1
Sweden	1
Switzerland	1
United Kingdom	1

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

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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

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### 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

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

<b>Contribution</b>	<b>Core paper</b>	<b>Indep. cites</b>	<b>Supports</b>
Contribution 1	Nuclear factor- $\kappa$ B—a pivotal transcription factor in chronic inflammatory diseases	17	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Immunity, Inflammation, and Cancer	7	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Mammalian MAP kinase signalling cascades	8	Dhanasar — Prong 2 (well-positioned)