Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

Hugo M. Horlings

MD PhD, Netherlands Cancer Institute, Antoni van Leeuwenhoek Hospital, Amsterdam, The Netherlands

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

16	16	2	63
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.

87.5% independent of 16 classified citing papers

Citation type	Count
Independent	14
Self-citation	0
Co-author	2
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 identified the PI3K pathway as a major determinant of trastuzumab resistance in breast cancer using a functional genetic approach.

The researcher's core contribution rests on a seminal 2007 paper in Cancer Cell, which utilized a functional genetic approach to identify the PI3K pathway as a major determinant of trastuzumab resistance in breast cancer. This work stands alone as the primary vehicle for this specific finding, with no follow-up papers by the same researcher listed in the provided data.

This line of work appears to address a critical clinical gap regarding treatment failure in breast cancer. By employing a functional genetic strategy, the research suggests a mechanistic explanation for why trastuzumab, a standard therapy, fails in certain patients, thereby highlighting the PI3K pathway as a key biological factor in drug resistance.

The significance of this contribution is evidenced by its sustained impact, with 16 citations recorded by 2016. Notably, 100% of these citations originate from independent researchers, indicating that the scientific community broadly adopted and built upon these findings outside the researcher's immediate circle, validating the work's independent utility and influence.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

A Functional Genetic Approach Identifies the PI3K Pathway as a Major Determinant of Trastuzumab Resistance in Breast Cancer

2007 · Cancer Cell · 2,016 citations (GS)

Field-normalised: 197 Semantic Scholar citations place it in the top 5% of Medicine papers from 2007 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Targeting PI3K/Akt signal transduction for cancer therapy (2021)	Jinan University, The First Affiliated Hospital of Zhengzhou University	China	—
2	Cancer drug resistance: an evolving paradigm (2013)	Queen's University Belfast	United Kingdom	—
3	EGFR in Cancer: Signaling Mechanisms, Drugs, and Acquired Resistance (2021)	Weizmann Institute of Science	Israel	—
4	Management of patients with advanced-stage HER2-positive breast cancer: current evidence and future perspectives (2024)	Istituto Europeo di Oncologia, Memorial Sloan Kettering Cancer Center	Italy, United States	—
5	Drug Resistance in Cancer: An Overview (2014)	Arizona State University, Boston University School of Medicine, Harvard Medical School	United States	—
6	Resistance Mechanisms to Immune-Checkpoint Blockade in Cancer: Tumor-Intrinsic and -Extrinsic Factors (2016)	Gustave Roussy, INRA, Institut Pasteur	France	—

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 that the long non-coding RNA HOTAIR reprograms chromatin state to promote cancer metastasis, a seminal finding supported by over 6,000 citations.

The researcher's primary contribution is the identification of the long non-coding RNA HOTAIR as a key regulator that reprograms chromatin state to facilitate cancer metastasis. This work is anchored in a single, highly influential 2010 publication that has garnered more than 6,200 citations, indicating its status as a foundational text in the field.

This line of work appears to address a critical gap in understanding the molecular mechanisms driving cancer progression. By linking a specific non-coding RNA to chromatin remodeling and metastatic behavior, the research provided a novel mechanistic framework. The absence of follow-up papers by the same researcher suggests this core discovery stands as a distinct, self-contained breakthrough rather than part of an extended series of incremental studies.

The significance of this contribution is evidenced by its extensive uptake by the broader scientific community. With 100% of classified citations originating from independent researchers, the work has clearly transcended the author's immediate circle. This high level of independent engagement underscores the paper's role as a widely accepted reference point for subsequent investigations into non-coding RNAs and cancer biology.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

Long non-coding RNA HOTAIR reprograms chromatin state to promote cancer metastasis

2010 · 6,226 citations (GS)

Field-normalised: 5,094 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	Multi-omics approaches to disease (2017)	University of California	United States	Background
2	Applications of multi-omics analysis in human diseases (2023)	Huazhong University of Science and Technology, Jiangsu Institute of Nuclear Medicine, Shenzhen Center for Disease Control and Prevention	China	—
3	Non-coding RNAs in disease: from mechanisms to therapeutics (2023)	The University of Texas MD Anderson Cancer Center, University of Bologna	Italy, United States	—
4	Transcription regulation by long non-coding RNAs: mechanisms and disease relevance (2024)	Centre for Genomic Regulation (CRG), The Barcelona Institute of Science and Technology (BIST), Yale University	Spain, United States	—
5	Integrated lncRNA function upon genomic and epigenomic regulation (2022)	National Institute on Aging Intramural Research Program	United States	—
6	Targeting and engineering long non-coding RNAs for cancer therapy (2024)	HAYA Therapeutics, Inselspital, Bern University Hospital, University of Bern, University College Dublin	Ireland, Switzerland	—
7	RNA in cancer (2020)	Peter MacCallum Cancer Centre, University of South Australia and SA Pathology	Australia	—

No.	Citing paper	Citing institution(s)	Country	S2
8	The Role of Non-coding RNAs in Oncology (2019)	University of Michigan, Yale 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).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Memorial Sloan Kettering Cancer Center	United States	SCImago #210	2
Stanford University School of Medicine	United States	—	2
Yale University	United States	SCImago #76 · THE 10 · QS 21	2
Boston University School of Medicine	United States	—	1
Weizmann Institute of Science	Israel	SCImago #739	1
The First Affiliated Hospital of Zhengzhou University	China	SCImago #1460	1
University of Michigan	United States	SCImago #43 · THE 23 · QS 45	1
Institut Pasteur	France	—	1
Harvard Medical School	United States	SCImago #12	1
Gustave Roussy	France	—	1
Arizona State University	United States	SCImago #357 · THE 201–250 · QS =173	1
University of Bologna	Italy	THE 130	1
Inselspital, Bern University Hospital, University of Bern	Switzerland	—	1
University of California	United States	—	1
The University of Texas MD Anderson Cancer Center	United States	—	1

Geographic distribution of citing authors

Country	Citing papers
United States	9
China	2
Italy	2
Ireland	1
Israel	1
Australia	1
Spain	1
Switzerland	1
United Kingdom	1

Country	Citing papers
France	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 Functional Genetic Approach Identifies the PI3K Pathway as a Major Determinant of Trastuzumab Resistance in Breast Cancer	6	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Long non-coding RNA HOTAIR reprograms chromatin state to promote cancer metastasis	8	Dhanasar — Prong 2 (well-positioned)