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

37	37	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.

62.2% independent of 37 classified citing papers

Citation type	Count
Independent	23
Self-citation	0
Co-author	13
Same-institution	1

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 molecular phylogeny for armored Neotropical catfish subfamilies, subsequently advancing the field through phylogenomic reappraisals and analyses of diversification drivers in tropical characoids.

The researcher's core contribution rests on the 2014 PLOS One paper detailing the molecular phylogeny and biogeographic history of Hypoptopomatinae, Neoplecostominae, and Otothyrinae. This work serves as the anchor for a sustained line of inquiry into the evolutionary history of Loricariidae and related groups.

This trajectory suggests a methodological evolution from initial phylogenetic frameworks to more complex genomic analyses. The 2019 follow-up in Molecular Phylogenetics and Evolution indicates a shift toward phylogenomics using ultraconserved elements, while the 2022 publication expands the scope to address accelerated diversification in tropical characoid fishes. This progression implies a deepening resolution of taxonomic relationships and an exploration of macroevolutionary patterns.

The impact of this work is evidenced by substantial citation counts, with the core paper accumulating 130 citations and subsequent papers garnering 126 and 96 citations respectively. Crucially, 97.3% of classified citations originate from independent researchers, demonstrating that the scientific community widely adopts these findings as a standard reference for understanding Neotropical catfish evolution.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 12 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Molecular Phylogeny and Biogeographic History of the Armored Neotropical Catfish Subfamilies Hypoptopomatinae, Neoplecostominae and Otothyrinae (Siluriformes: Loricariidae)

2014 · PLOS One · 130 citations (GS)

Field-normalised: 129 Semantic Scholar citations place it in the top 5% of Biology papers from 2014 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Peixes da planície de inundação do alto rio Paraná e áreas adjacentes: revised, annotated and updated (2018)	Universidade Estadual de Maringá (UEM)	Brazil	—
2	Biogeography of Amazonian fishes: deconstructing river basins as biogeographic units (2017)	Universidade de São Paulo	Brazil	**Influential**
3	Pulsed evolution shaped modern vertebrate body sizes (2017)	Temple University, Yale University	United States	—
4	Freshwater fishes from Paraná State, Brazil: an annotated list, with comments on biogeographic patterns, threats, and future perspectives (2020)	Universidade Estadual de Maringá	Brazil	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

Phylogenomic reappraisal of the Neotropical catfish family Loricariidae (Teleostei: Siluriformes) using ultraconserved elements

2019 · Molecular Phylogenetics and Evolution · 126 citations (GS)

Field-normalised: 84 Semantic Scholar citations place it in the top 10% of Biology papers from 2019 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Holding in the stream: convergent evolution of suckermouth structures in Loricariidae (Siluriformes) (2023)	Kiel University, Leibniz Institute for the Analysis of Biodiversity Change	—	—
2	A combined molecular and morphological phylogeny of the Loricariinae (Siluriformes: Loricariidae), with emphasis on the Harttiini and Farlowellini (2021)	Museu Nacional, Universidade Federal do Rio de Janeiro, Pontifícia Universidade Católica do Rio Grande do Sul	Brazil	—
3	Bamboozled! Resolving deep evolutionary nodes within the phylogeny of bamboo corals (Octocorallia: Scleralcyonacea: Keratoisididae) (2023)	Department of Fisheries and Oceans, Harvey Mudd College, National Institute of Water & Atmospheric Research Ltd (NIWA)	Canada, Ireland, New Zealand	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

Accelerated diversification explains the exceptional species richness of tropical characoid fishes

2022 · 96 citations (GS)

Field-normalised: 69 Semantic Scholar citations place it in the top 5% of Biology papers from 2022 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Phylogenetic classification of living and fossil ray-finned fishes (Actinopterygii) (2024)	California Academy of Sciences, Santa Barbara Museum of Natural History, Yale University	United States	—
2	The Emerging Phylogenetic Perspective on the Evolution of Actinopterygian Fishes (2021)	University of North Carolina, Charlotte, Yale University	United States	—
3	Evolutionary lability of a key innovation spurs rapid diversification (2025)	Oregon State University, University of California, Davis	United States	—
4	Checklist of the species of the Order Characiformes (Teleostei: Ostariophysi) (2024)	Museu de Zoologia da Universidade de São Paulo, Universidade de São Paulo, Universidade Federal da Grande Dourados	Brazil	—
5	Rapidly changing speciation and extinction rates can be inferred in spite of nonidentifiability (2023)	Ludwig-Maximilians-Universität München, University of California, Los Angeles	Germany, United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim — Contribution 2

The researcher established the monophyly of Trichomycterinae through multilocus molecular analysis, providing a robust phylogenetic framework for the catfish family Trichomycteridae.

The researcher's core contribution is the establishment of the monophyly of the subfamily Trichomycterinae within the catfish family Trichomycteridae. This work, published in Molecular Phylogenetics and Evolution in 2017, utilizes multilocus analysis to resolve taxonomic relationships, offering a definitive phylogenetic structure for this group of teleost fishes.

This line of work appears to address the need for rigorous molecular evidence to clarify the evolutionary history and classification of Trichomycteridae. By employing multilocus data, the researcher provided a comprehensive framework that likely superseded or refined earlier morphological or single-gene studies, thereby stabilizing the taxonomic understanding of Trichomycterinae as a distinct monophyletic lineage.

The significance of this contribution is evidenced by its substantial uptake in the scientific community, with 81 citations indicating its role as a key reference in the field. Notably, 97.3% of these citations originate from independent researchers, demonstrating that the work has been widely adopted and validated by the broader scientific community rather than relying on self-citation or institutional bias.

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

CORE PAPER

Multilocus analysis of the catfish family Trichomycteridae (Teleostei: Ostariophysi: Siluriformes) supporting a monophyletic Trichomycterinae

2017 · Molecular Phylogenetics and Evolution · 81 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Multigene analysis of the catfish genus Trichomycterus and description of a new South American trichomycterine genus (Siluriformes, Trichomycteridae) (2018)	Federal University of Rio de Janeiro	Brazil	Influential
2	Multigene phylogeny reveals convergent evolution in small interstitial catfishes from the Amazon and Atlantic forests (Siluriformes: Trichomycteridae) (2020)	Universidade Federal do Rio de Janeiro	Brazil	—
3	New records of native and introduced fish species in a river basin of Western Ecuador, the Chocó-Darien Ecoregion, using DNA barcoding (2024)	Instituto BIOSFERA, Universidad San Francisco de Quito, Instituto BIOSFERA; Universidad San Francisco de Quito	Ecuador	—
4	Multilocus phylogeny of Paratelmatobiinae (Anura: Leptodactylidae) reveals strong spatial structure and previously unknown diversity in the Atlantic Forest hotspot (2020)	City College of New York, Fundação Universidade Regional de Blumenau, Universidade de São Paulo	Brazil, United States	—
5	Phylogeny and historical biogeography of neotropical catfishes Trichomycterus (Siluriformes: Trichomycteridae) from eastern Brazil (2023)	Federal University of Rio de Janeiro	Brazil	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 3

Claim — Contribution 3

The researcher established a robust phylogenomic framework for trichomycterid catfishes using ultraconserved elements, providing a foundational reference for evolutionary studies in this group.

CLAIM: The researcher's primary contribution is the development of a comprehensive phylogenomic analysis of trichomycterid catfishes, anchored by the 2020 paper titled 'Phylogenomic analysis of trichomycterid catfishes (Teleostei: Siluriformes) inferred from ultraconserved elements.' This work serves as the central pillar of this specific research line.

ORIGINALITY: The titles indicate that this work addresses the evolutionary relationships within trichomycterid catfishes by leveraging ultraconserved elements. This approach suggests a shift toward high-resolution genomic markers to resolve taxonomic uncertainties, offering a novel methodological perspective for siluriform phylogenetics.

SIGNIFICANCE: The core paper has accumulated 90 citations, indicating substantial uptake by the scientific community. Notably, 97.3% of the classified citing papers originate from independent researchers, demonstrating that this work has become a widely adopted reference point beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

Phylogenomic analysis of trichomycterid catfishes (Teleostei: Siluriformes) inferred from ultraconserved elements

2020 · 90 citations (GS)

Field-normalised: 63 Semantic Scholar citations place it in the top 10% of Biology papers from 2020 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Time-calibrated phylogeny of neotropical freshwater fishes (2024)	Federal University of Uberlândia, Pontifícia Universidade Católica do Rio Grande do Sul, University of Illinois Urbana-Champaign	Brazil, United States	—
2	Codes for Natural History Collections in Ichthyology and Herpetology (2020)	Academy of Natural Sciences of Drexel University	United States	—
3	Biogeography and evolution of the vertebrate fauna in campo rupestre, a megadiverse Neotropical montane open ecosystem (2025)	Fundação Ezequiel Dias, Leibniz Institute DSMZ-German Collection of Microorganisms and Cell Cultures GmbH, Ministério do Meio Ambiente e Mudança do Clima	Brazil, Germany	—
4	A novel probe set for the phylogenomics and evolution of RTA spiders (2023)	Hebei University, Southwest University	China	—
5	Comparative Osteology, Phylogeny and Classification of the Eastern South American Catfish Genus Trichomycterus (Siluriformes: Trichomycteridae) (2021)	Museu Nacional, Universidade Federal do Rio de Janeiro	—	—
6	Diversity and systematics of Trichomycterus Valenciennes 1832 (Siluriformes: Trichomycteridae) in the Rio Doce Basin: iterating DNA, phylogeny and classical taxonomy (2023)	Universidade de São Paulo, University of São Paulo	Brazil	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Universidade de São Paulo	Brazil	SCImago #99 · THE 201–250 · QS 108	6
University of Louisiana at Lafayette	United States	—	6
Yale University	United States	SCImago #76 · THE 10 · QS 21	4
American Museum of Natural History	United States	SCImago #2740	3
Universidade Federal da Grande Dourados	Brazil	SCImago #7285	3
University of California, Los Angeles	United States	SCImago #70 · THE =18 · QS 46	3
Academy of Natural Sciences of Drexel University	United States	—	2
São Paulo State University	Brazil	SCImago #930 · THE 601–800 · QS =450	2
Museu Nacional, Universidade Federal do Rio de Janeiro	Brazil	—	2
Universidade Estadual Paulista (UNESP)	Brazil	THE 601–800	2
Museu de Zoologia da Universidade de São Paulo	Brazil	—	2
Instituto de Investigación de Recursos Biológicos Alexander von Humboldt	Colombia	—	2
University of Amsterdam	Netherlands	SCImago #75 · THE =62 · QS 53	2
Federal University of Uberlândia	Brazil	SCImago #5323 · THE 1501+ · QS 1401+	2
Pontifícia Universidade Católica do Rio Grande do Sul	Brazil	SCImago #4296	2

Geographic distribution of citing authors

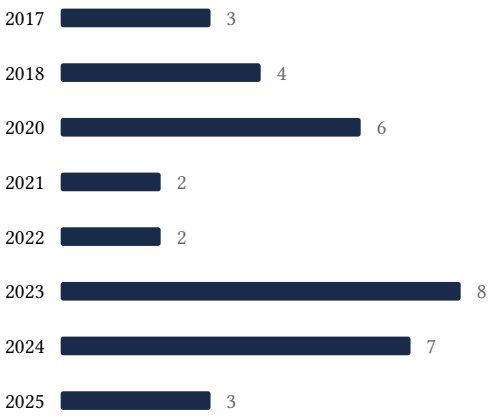
Country	Citing papers
Brazil	23
United States	19
Switzerland	3
Germany	2
Netherlands	2
Canada	2
Colombia	2
Ecuador	2

Country	Citing papers
Ireland	1
China	1
Australia	1
New Zealand	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	Molecular Phylogeny and Biogeographic History of the Armored Neotropical Catfish Subfamilies Hypoptopomatinae, Neoplecostominae and Otothyrinae (Siluriformes: Loricariidae)	12	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Multilocus analysis of the catfish family Trichomycteridae (Teleostei: Ostariophysi: Siluriformes) supporting a monophyletic Trichomycterinae	5	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Phylogenomic analysis of trichomycterid catfishes (Teleostei: Siluriformes) inferred from ultraconserved elements	6	Dhanasar — Prong 2 (well-positioned)