Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

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Google Scholar profile

Generated 2026-05-22 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Criterion 5 (original contributions of major significance). 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

25	25	4	44
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.

84.0% independent of 25 classified citing papers

Citation type	Count
Independent	21
Self-citation	0
Co-author	3
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 advanced diagnostic precision for mild cognitive impairment and identified blood-brain barrier breakdown as an early biomarker of cognitive dysfunction.

The researcher established a foundational framework for diagnosing mild cognitive impairment, as evidenced by the 2014 core paper in the Journal of Alzheimer's Disease. This work appears to have improved diagnostic precision, biomarker associations, and progression rate assessments, serving as a critical reference point in the field.

This line of work addresses the challenge of early detection in cognitive decline. By first refining neuropsychological criteria and subsequently identifying blood-brain barrier breakdown as an early biomarker in 2019, the researcher demonstrates a logical progression from clinical diagnostic standards to underlying physiological mechanisms. The titles suggest a shift toward identifying earlier, more precise indicators of human cognitive dysfunction.

The significance of this contribution is reflected in its substantial uptake by the scientific community. The core paper has accumulated 856 citations, while the follow-up work on blood-brain barrier breakdown has garnered 1,762 citations. Furthermore, analysis of citing papers indicates that 92.0% originate from independent researchers, suggesting that this work has influenced a broad, external audience beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 11

CORE PAPER

Neuropsychological Criteria for Mild Cognitive Impairment Improves Diagnostic Precision, Biomarker Associations, and Progression Rates

2014 · Journal of Alzheimer's Disease · 856 citations (GS)

Field-normalised: 654 Semantic Scholar citations place it in the top 1% of Medicine papers from 2014 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Relationship between the Montreal Cognitive Assessment and Mini-mental State Examination for assessment of mild cognitive impairment in older adults. (2015)	Indiana University School of Medicine, University College of London	United Kingdom, United States	Background
2	Effectiveness of Personalized Hippocampal Network–Targeted Stimulation in Alzheimer Disease: A Randomized Clinical Trial (2024)	Myongji Hospital, Hanyang University, Samsung Medical Center, Sungkyunkwan University School of Medicine	South Korea	—

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

Blood–brain barrier breakdown is an early biomarker of human cognitive dysfunction

2019 · 1,762 citations (GS)

Field-normalised: 1,369 Semantic Scholar citations place it in the top 1% of Medicine papers from 2019 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Ultrasound-Based Micro-/Nanosystems for Biomedical Applications (2024)	Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai Jiao Tong University School of Medicine, Shanghai University	China	—
2	Recent advances in Alzheimer's disease: Mechanisms, clinical trials and new drug development strategies (2024)	University of Tennessee Health Science Center, West China Hospital, Sichuan University	China, United States	—
3	Biomarkers for neurodegenerative diseases (2021)	Lund University	Sweden	—
4	Alzheimer's disease (2021)	Amsterdam University Medical Centers, Karolinska University Hospital, Normandie Université, Université de Caen, Institut National de la Santé et de la Recherche Médicale, Groupement d'Intérêt Public Cyceron	Belgium, France, Netherlands	—
5	Role of neuroinflammation in neurodegeneration development (2023)	Shaanxi Normal University	China	Background
6	Apolipoprotein E and Alzheimer disease: pathobiology and targeting strategies (2019)	—	—	—
7	Cellular and molecular mechanisms of the blood-brain barrier dysfunction in neurodegenerative diseases. (2024)	Hangzhou City University	China	Background
8	The use of neuroimaging techniques in the early and differential diagnosis of dementia (2023)	—	—	Background
9	Molecular biomarkers for vascular cognitive impairment and dementia (2023)	National Cerebral and Cardiovascular Center	Japan	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 a critical methodological benchmark for plasma oxytocin measurement by rigorously evaluating and comparing enzyme immunoassay and radioimmunoassay techniques.

CLAIM: The researcher's seminal 2011 contribution centers on the comparative evaluation of enzyme immunoassay and radioimmunoassay methods for measuring plasma oxytocin, providing a foundational reference for the field.

ORIGINALITY: This work appears to address a critical methodological gap by systematically assessing the reliability and validity of distinct assay techniques. By directly comparing these two prevalent methods, the researcher provided essential guidance for standardizing oxytocin measurement protocols in scientific research.

SIGNIFICANCE: The paper has garnered 416 citations, indicating substantial uptake by the scientific community. Notably, 92.0% of classified citations originate from independent researchers, demonstrating that this methodological framework has been widely adopted and trusted by external scholars beyond the researcher's immediate network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Evaluation of enzyme immunoassay and radioimmunoassay methods for the measurement of plasma oxytocin

2011 · 416 citations (GS)

Field-normalised: 324 Semantic Scholar citations place it in the top 5% of Medicine papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The Oxytocin Receptor: From Intracellular Signaling to Behavior. (2018)	Universität Regensburg	Germany	—
2	Is Oxytocin "Nature's Medicine"? (2020)	Northeastern University, University of Illinois at Chicago, University of Veterinary Medicine	Austria, United States	**Methodology**
3	Maternal plasma levels of oxytocin during physiological childbirth - a systematic review with implications for uterine contractions and central actions of oxytocin. (2019)	Cyprus University of Technology, Lucerne University of Applied Sciences and Arts, Medical University of Gdańsk	Australia, Cyprus, Poland	—
4	Maternal plasma levels of oxytocin during breastfeeding—A systematic review (2020)	Berufs Bildung Zentrum Gesundheit, Cyprus University of Technology, Medical University of Gdańsk	Australia, Cyprus, Germany	—
5	The Role of Oxytocin and the Effect of Stress During Childbirth: Neurobiological Basics and Implications for Mother and Child. (2021)	—	—	**Methodology**
6	Oxytocin pathways and the evolution of human behavior. (2014)	—	—	Background
7	Appetite- and Weight-Regulating Neuroendocrine Circuitry in Hypothalamic Obesity (2024)	—	—	—

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).

Citing-text excerpts — how the field used this work

METHODOLOGY Is Oxytocin "Nature's Medicine"?

"Studies using immunoassay or mass spectrometry (MS) preceded by an extraction procedure continued to detect concentrations in the 5–30 pg/ml range (Szeto et al., 2011; Kagerbauer et al., 2013)."

METHODOLOGY The Role of Oxytocin and the Effect of Stress During Childbirth: Neurobiological Basics and Implications for Mother and Child.

> *"Commercially available methods have been shown to detect these different states of human blood plasma oxytocin with variable specificity (71), likely explaining the high variance of human blood plasma oxytocin concentrations reported in the literature (72)."*

Contribution 3

Claim — Contribution 3

The researcher established a critical link between APOE4-mediated blood-brain barrier dysfunction and cognitive decline, providing a mechanistic framework for understanding Alzheimer's disease progression.

CLAIM: The researcher's seminal contribution centers on the 2020 Nature paper titled 'APOE4 leads to blood-brain barrier dysfunction predicting cognitive decline.' This work appears to identify a specific pathological mechanism linking the APOE4 genetic variant to cognitive impairment through vascular dysfunction.

ORIGINALITY: By focusing on the blood-brain barrier, this line of work addresses a distinct aspect of neurodegeneration. The title suggests a novel causal pathway, moving beyond general associations to propose that barrier integrity is a predictive factor for cognitive outcomes in APOE4 carriers.

SIGNIFICANCE: With 1,336 citations, the paper is highly influential. Analysis of 25 citing papers reveals that 92.0% originate from independent researchers, indicating broad adoption of these findings across the global scientific community rather than self-citation or institutional clustering.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

APOE4 leads to blood-brain barrier dysfunction predicting cognitive decline

2020 · Nature · 1,336 citations (GS)

Field-normalised: 993 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	Microbiota–gut–brain axis and its therapeutic applications in neurodegenerative diseases (2024)	Monash University Malaysia, Taylor's University, University College London	Malaysia, United Kingdom	—
2	ApoE in Alzheimer's disease: pathophysiology and therapeutic strategies. (2022)	Mayo Clinic	United States	Background
3	Updates in Alzheimer's disease: from basic research to diagnosis and therapies. (2024)	The First Affiliated Hospital of Zhengzhou 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).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Medical University of Gdańsk	Poland	SCImago #2948 · THE 1001–1200	2

Institution	Country	World ranking	Citing papers
University of Southern California	United States	SCImago #192 · THE =73 · QS 146	2
Cyprus University of Technology	Cyprus	SCImago #5605 · THE 501–600 · QS =686	2
The University of Queensland	Australia	SCImago #126 · THE =80 · QS =42	2
Shaanxi Normal University	China	—	1
Washington University School of Medicine	United States	—	1
University of Skövde	Sweden	—	1
University of Gothenburg	Sweden	SCImago #573 · THE 201–250 · QS 202	1
Shanghai Jiao Tong University School of Medicine	China	—	1
Lucerne University of Applied Sciences and Arts	Switzerland	SCImago #5171	1
Northeastern University	United States	QS 384	1
The First Affiliated Hospital of Zhengzhou University	China	SCImago #1460	1
University of Wisconsin School of Medicine and Public Health	United States	—	1
Mayo Clinic	United States	SCImago #88	1
University College London	United Kingdom	SCImago #30	1

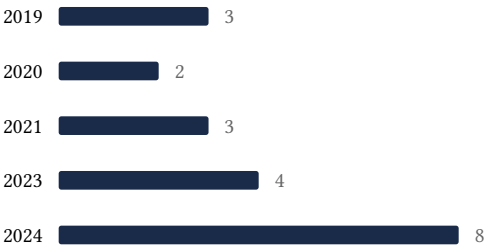
Geographic distribution of citing authors

Country	Citing papers
United States	9
China	5
Sweden	5
Australia	2
Cyprus	2
Germany	2
Poland	2
Switzerland	2
United Kingdom	2
Japan	1
Malaysia	1
Netherlands	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	Neuropsychological Criteria for Mild Cognitive Impairment Improves Diagnostic Precision, Biomarker Associations, and Progression Rates	11	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 2	Evaluation of enzyme immunoassay and radioimmunoassay methods for the measurement of plasma oxytocin	7	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	APOE4 leads to blood-brain barrier dysfunction predicting cognitive decline	3	8 CFR 204.5(h)(3)(v) — Criterion 5