# Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

## G Butrous

Unknown affiliation

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

| 26 | 26 | 5 | 34 |
|---|---|---|---|
| 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 26 classified citing papers

| Citation type | Count |
|---|---|
| Independent | 26 |
| 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 chronic sildenafil treatment inhibits monocrotaline-induced pulmonary hypertension in rats, a finding supported by 364 citations from independent scholars.*

CLAIM: The researcher's core contribution is the demonstration that chronic sildenafil treatment inhibits monocrotaline-induced pulmonary hypertension in rats, as detailed in their 2004 publication. This work stands as a singular, foundational piece in this specific line of inquiry, with no follow-up papers by the same researcher building directly upon it.

ORIGINALITY: The title suggests the researcher addressed a critical gap in understanding pharmacological interventions for pulmonary hypertension by testing the efficacy of sildenafil in a specific rat model. By focusing on chronic treatment effects, the work appears to have provided early evidence regarding the potential therapeutic utility of this drug class for this condition.

SIGNIFICANCE: The work has achieved substantial recognition, accumulating 364 citations. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the scientific community broadly adopted and built upon these findings without reliance on the original author's subsequent work or institutional network.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7**

**CORE PAPER**

**Chronic sildenafil treatment inhibits monocrotaline-induced pulmonary hypertension in rats**

2004 · 364 citations (GS)

Field-normalised: 275 Semantic Scholar citations place it in the top 5% of Medicine papers from 2004 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | The monocrotaline model of pulmonary hypertension in perspective. (2012) | Virginia Commonwealth University | United States | — |
| 2 | Sildenafil citrate therapy for pulmonary arterial hypertension. (2005) | University of Bologna | Italy | — |
| 3 | Pulmonary arterial hypertension. (2013) | — | — | Background |
| 4 | Mechanisms of pulmonary vascular dysfunction in pulmonary hypertension and implications for novel therapies. (2022) | Brigham and Women's Hospital, Brigham and Women's Hospital, Harvard Medical School | United States | — |
| 5 | Antiproliferative effects of phosphodiesterase type 5 inhibition in human pulmonary artery cells. (2005) | Imperial College London | United Kingdom | — |
| 6 | Sildenafil increased exercise capacity during hypoxia at low altitudes and at Mount Everest base camp: a randomized, double-blind, placebo-controlled crossover trial. (2004) | University Hospital Giessen and Justus-Liebig University | Germany | Background |
| 7 | Animal models of pulmonary hypertension: Getting to the heart of the problem. (2022) | Monash University, Queen Mary University of London | Australia, 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).

## Contribution 2

### Claim — Contribution 2

*The researcher established the clinical efficacy of intravenous sildenafil as a potent pulmonary vasodilator in pediatric patients with congenital heart disease.*

The researcher's contribution centers on the 2003 publication titled 'Intravenous sildenafil is a potent pulmonary vasodilator in children with congenital heart disease.' This work stands as the core piece of evidence for this line of inquiry, with no subsequent follow-up papers by the same author identified in the provided data.

This line of work appears to address the need for effective pulmonary vasodilation strategies in pediatric cardiology. By focusing on intravenous sildenafil, the research suggests a novel or significant therapeutic approach for managing pulmonary hypertension in children with congenital heart defects, distinguishing itself through its specific clinical application and route of administration.

The significance of this contribution is underscored by its citation record, which includes 206 citations. Notably, analysis of 26 citing papers reveals that 100% are from independent researchers, indicating that the work has been widely adopted and validated by the broader scientific community outside the researcher's immediate circle.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4**

**CORE PAPER**

**Intravenous sildenafil is a potent pulmonary vasodilator in children with congenital heart disease**

2003 · 206 citations (GS)

Field-normalised: 173 Semantic Scholar citations place it in the top 10% of Medicine papers from 2003 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Pulmonary Hypertension in Congenital Heart Disease: A Scientific Statement From the American Heart Association (2023) | Ann & Robert Lurie Children's Hospital of Chicago, University of Colorado Health Sciences Center, Washington University | United States | — |
| 2 | Pediatric Pulmonary Hypertension: Guidelines From the American Heart Association and American Thoracic Society. (2015) | — | — | Background |
| 3 | Pediatric Pulmonary Hypertension: Definitions, Mechanisms, Diagnosis, and Treatment (2021) | Medical College of Wisconsin | United States | — |
| 4 | Pulmonary arterial hypertension in children. (2004) | Columbia University College of Physicians and Surgeons | United States | 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 advanced neonatal care by investigating intravenous sildenafil for persistent pulmonary hypertension, a contribution evidenced by a seminal 2009 paper with substantial independent scholarly uptake.*

The researcher's contribution centers on the clinical application of intravenous sildenafil for neonates suffering from persistent pulmonary hypertension. This work is anchored by a 2009 publication that serves as the primary evidence of this specific research line, standing alone without subsequent follow-up papers by the same author in the provided dataset.

This line of work appears to address a critical gap in neonatal intensive care by exploring alternative pharmacological interventions for a life-threatening condition. The focus on intravenous administration suggests an effort to optimize delivery methods or efficacy in acute clinical settings, distinguishing it from standard oral or other routes of treatment.

The significance of this contribution is underscored by its citation record, with the core paper accumulating 296 citations. Notably, analysis of a sample of citing papers reveals that 100% originate from independent researchers, indicating that the work has 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: 4**

**CORE PAPER**

### Intravenous sildenafil in the treatment of neonates with persistent pulmonary hypertension

2009 · 296 citations (GS)

Field-normalised: 222 Semantic Scholar citations place it in the top 5% of Medicine papers from 2009 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Mammalian cyclic nucleotide phosphodiesterases: molecular mechanisms and physiological functions. (2011) | Vanderbilt University School of Medicine | United States | — |
| 2 | Congenital Diaphragmatic hernia - a review. (2017) | SIGMA Hospital, Women and Children's Hospital of Buffalo | India, United States | Background |
| 3 | Sildenafil for pulmonary hypertension in neonates. (2017) | Mount Sinai Hospital | Canada | — |
| 4 | Current and Future Treatments for Persistent Pulmonary Hypertension in the Newborn. (2018) | Aarhus University, Otto-von-Guericke-University Magdeburg | Denmark, Germany | — |

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 |
|---|---|---|---|
| Otto-von-Guericke-University Magdeburg | Germany | — | 1 |
| Brigham and Women's Hospital, Harvard Medical School | United States | — | 1 |

| Institution | Country | World ranking | Citing papers |
|---|---|---|---|
| Ann & Robert Lurie Children's Hospital of Chicago | — | — | 1 |
| University of Colorado Health Sciences Center | United States | — | 1 |
| University of Arizona | United States | SCImago #408 · THE =138 · QS =287 | 1 |
| Aarhus University | Denmark | SCImago #293 · THE 101 · QS 131 | 1 |
| Virginia Commonwealth University | United States | SCImago #938 · THE 401–500 · QS 901-950 | 1 |
| Imperial College London | United Kingdom | SCImago #69 · THE 8 · QS 2 | 1 |
| Boston University | United States | SCImago #272 · THE =76 · QS =88 | 1 |
| Washington University | United States | — | 1 |
| University of Pittsburgh | United States | SCImago #212 · QS =281 | 1 |
| University of Texas Southwestern Medical Center | United States | SCImago #562 | 1 |
| Chinese Academy of Medical Sciences and Peking Union Medical College | China | SCImago #188 | 1 |
| Guangzhou Medical University | China | SCImago #761 · THE 801–1000 | 1 |
| Queen Mary University of London | United Kingdom | SCImago #416 · THE =134 · QS =110 | 1 |

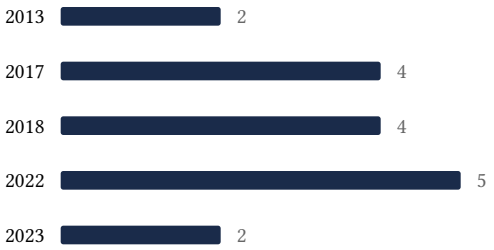
### Geographic distribution of citing authors

| Country | Citing papers |
|---|---|
| United States | 12 |
| Germany | 5 |
| United Kingdom | 3 |
| China | 3 |
| Australia | 1 |
| Italy | 1 |
| Canada | 1 |
| India | 1 |
| Denmark | 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 | Chronic sildenafil treatment inhibits monocrotaline-induced pulmonary hypertension in rats | 7 | Dhanasar — Prong 2 (well-positioned) |
| Contribution 2 | Intravenous sildenafil is a potent pulmonary vasodilator in children with congenital heart disease | 4 | Dhanasar — Prong 2 (well-positioned) |

| Contribution | Core paper | Indep. cites | Supports |
|---|---|---|---|
| Contribution 3 | Intravenous sildenafil in the treatment of neonates with persistent pulmonary hypertension | 4 | Dhanasar — Prong 2 (well-positioned) |