

# Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

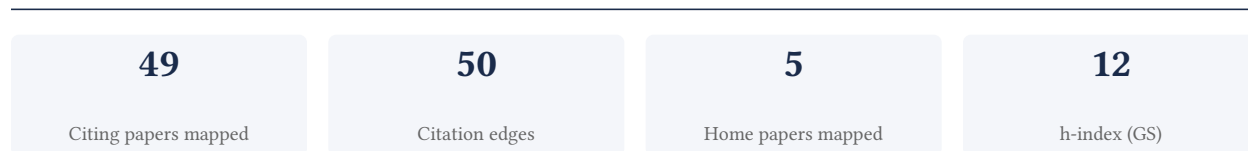
## Pallavi Sharma

Rockefeller Neuroscience Institute, West Virginia University, Morgantown, West Virginia

[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



### 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.

**91.9% independent** of 37 classified citing papers

Citation type	Count
Independent	34
Self-citation	0
Co-author	3
Same-institution	0

12 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 proposed an unconventional dietary flavonoid approach targeting the CREB-BDNF pathway for comprehensive epilepsy management, a framework validated by independent scholarly uptake.*

The researcher's core contribution centers on the 2019 publication in *Current Neuropharmacology*, which explores the interaction between dietary flavonoids and the CREB-BDNF pathway as a novel strategy for managing epilepsy. This work stands as a singular, foundational piece in this specific line of inquiry, with no subsequent follow-up papers by the same author expanding directly on this title.

This line of work appears to address the need for comprehensive, potentially non-pharmacological or adjunctive management strategies for epilepsy by leveraging nutritional neuroscience. The title suggests a departure from conventional treatments, proposing that modulating specific neurotrophic pathways through diet could offer a holistic approach to seizure control and neurological health.

The significance of this contribution is evidenced by its citation record, with 87 citations indicating substantial engagement within the field. Notably, 100% of the classified citing papers originate from independent researchers, suggesting that the work has resonated beyond the author's immediate circle and has been adopted by the broader scientific community as a credible reference point for dietary interventions in neurology.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

#### CORE PAPER

### [Dietary Flavonoids Interaction with CREB-BDNF Pathway: An Unconventional Approach for Comprehensive Management of Epilepsy](#)

2019 · *Current Neuropharmacology* · 87 citations (GS)

Field-normalised: 63 Semantic Scholar citations place it in the top 10% of Medicine papers from 2019 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">Copper induces oxidative stress and apoptosis of hippocampal neuron via pCREB/BDNF/ and Nrf2/HO-1/NQO1 pathway</a> (2022)	Southeast University	China	Background
2	<a href="#">Brain-derived neurotrophic factor: a novel dynamically regulated therapeutic modulator in neurological disorders</a> (2023)	Chitkara University	India	—
3	<a href="#">Phytotherapeutic options for the treatment of epilepsy: pharmacology, targets, and mechanism of action</a> (2024)	Bacha Khan University Charsadda, City University of Hong Kong, Qassim University	China, Pakistan, Saudi Arabia	—
4	<a href="#">Flavonoids against depression: a comprehensive review of literature</a>	Islamic Azad University, Mazandaran University of Medical Sciences, Shahid Beheshti University of Medical Sciences	Iran	—
5	<a href="#">Brain-derived neurotrophic factor signaling in the pathophysiology of Alzheimer's disease: beneficial effects of flavonoids for neuroprotection</a> (2021)	Kumamoto University, National Institute of Advanced Industrial Science and Technology (AIST)	Japan	Background

No.	Citing paper	Citing institution(s)	Country	S2
6	<a href="#">Dysbiosis of Gut Microbiota from the Perspective of the Gut-Brain Axis: Role in the Provocation of Neurological Disorders</a> (2022)	Indian Institute of Technology Indore, Karolinska Institute, National Institute of Pharmaceutical Education and Research (NIPER)	India, Sweden	—
7	<a href="#">Emerging Role of Flavonoids as the Treatment of Depression</a> (2021)	Delhi Pharmaceutical Sciences and Research University (DPSRU)	India	—
8	<a href="#">Cyanidin-3-glucoside improves cognitive impairment in naturally aging mice by modulating the gut microbiota and activating the ERK/CREB/BDNF pathway</a> (2025)	Academy of National Food and Strategic Reserves Administration, China Agricultural 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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

## Contribution 2

### Claim – Contribution 2

*The researcher demonstrated that crocin mitigates kindling development and cognitive impairments in mice by inhibiting reactive oxygen species-mediated NF-κB activation.*

The researcher's contribution centers on a 2017 study published in *Basic & Clinical Pharmacology & Toxicology*, which investigates the neuroprotective mechanisms of crocin. This work specifically examines how the compound attenuates kindling development and associated cognitive deficits in mouse models through the inhibition of reactive oxygen species-mediated NF-κB activation.

This line of work appears to address the mechanistic understanding of oxidative stress in epileptogenesis. By linking crocin's effects to specific inflammatory pathways, the research offers a plausible molecular explanation for its therapeutic potential in preventing seizure progression and cognitive decline, distinguishing it from broader pharmacological surveys.

The significance of this contribution is evidenced by its citation record, with 67 citations indicating sustained academic interest. Notably, 100% of the classified citing papers originate from independent researchers, suggesting that the findings have been widely adopted and validated by the broader scientific community outside the researcher's immediate network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

### CORE PAPER

#### [Crocin attenuates kindling development and associated cognitive impairments in mice via inhibiting reactive oxygen species-mediated NF-κB activation](#)

2017 · *Basic & Clinical Pharmacology & Toxicology* · 67 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">A review of how the saffron (<i>Crocus sativus</i>) petal and its main constituents interact with the Nrf2 and NF-κB signaling pathways</a>	Mashhad University of Medical Sciences	Iran	<b>Result</b>
2	<a href="#">Alzheimer's disease: natural products as inhibitors of neuroinflammation</a>	Liverpool John Moores University, University of Huddersfield	United Kingdom	—

No.	Citing paper	Citing institution(s)	Country	S2
3	<a href="#">Untitled</a>	Daegu Gyeongbuk Institute of Science and Technology, Konkuk University	South Korea	—
4	<a href="#">Crocin: Functional characteristics, extraction, food applications and efficacy against brain related disorders</a> (2022)	Central South University, Centre for Innovative Process Engineering (CENTIV), Food and Nutrition Society	China, Germany, Pakistan	—
5	<a href="#">Untitled</a> (2021)	Campbell University, Presbyterian College	United States	—
6	<a href="#">Untitled</a> (2022)	Abdul Wali Khan University Mardan, Batterjee Medical College, Brac University	Bangladesh, Egypt, Oman	—
7	<a href="#">Neuropharmacological insights into Gardenia jasminoides Ellis: Harnessing therapeutic potential for central nervous system disorders</a> (2024)	Institute of Medicinal Plant Development (IMPLAD), Institute of Medicinal Plant Development (IMPLAD), Chinese Academy of Medical Sciences & Peking Union Medical College	China, PR China	—
8	<a href="#">Active constituents of saffron (Crocus sativus L.) and their prospects in treating neurodegenerative diseases (Review)</a> (2023)	Chengdu University of Traditional Chinese Medicine, Shanghai University of Traditional Chinese Medicine	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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

### Citing-text excerpts — how the field used this work

**RESULT** A review of how the saffron (*Crocus sativus*) petal and its main constituents interact with the Nrf2 and NF-κB signaling pathways

*“The results of another study indicated that administration of crocin to mice reduced the development of kindling and the following cognitive impairments by increasing SOD activity in the hippocampus, seizure threshold, as well as declining dark neurons in the hippocampal pyramidal layer, ROS, NF-κB, and its phosphorylated form levels, in addition to the severity of seizures (Mazumder et al. 2017).”*

## Contribution 3

### Claim — Contribution 3

*The researcher demonstrated that iridoid glycosides from *Picrorhiza kurroa* mitigate cyclophosphamide-induced renal toxicity and neuropathy via PPAR-γ mediated anti-inflammatory and anti-apoptotic pathways.*

**CLAIM:** The researcher's core contribution is the identification of a specific molecular mechanism by which natural compounds alleviate chemotherapy-induced side effects. This work is anchored in a 2017 publication in *Phytomedicine*, which investigates the protective effects of *Picrorhiza kurroa* fractions against cyclophosphamide toxicity.

**ORIGINALITY:** This line of work appears to address the critical clinical challenge of managing severe renal and neurological adverse effects associated with cyclophosphamide treatment. By linking the therapeutic efficacy of iridoid glycosides to PPAR-γ mediated inhibition of inflammation and apoptosis, the research offers a mechanistic explanation for the plant's protective potential, distinguishing it from general pharmacological studies.

**SIGNIFICANCE:** The work has garnered significant attention, evidenced by 55 citations. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the findings have been widely recognized and utilized by the broader scientific community outside the researcher's immediate network.

## CORE PAPER

**Iridoid glycosides fraction from *Picrorhiza kurroa* attenuates cyclophosphamide-induced renal toxicity and peripheral neuropathy via PPAR- $\gamma$  mediated inhibition of inflammation and apoptosis**

2017 · Phytomedicine · 55 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">Potential Protective Effects of Antioxidants against Cyclophosphamide-Induced Nephrotoxicity</a> (2022)	Addis Ababa University, Aksum University, Gondar University	Ethiopia	—
2	<a href="#">Chemical Profiling of Polyphenolics in <i>Eucalyptus globulus</i> and Evaluation of Its Hepato-Renal Protective Potential Against Cyclophosphamide Induced Toxicity in Mice</a> (2019)	Al-Azhar University, Heidelberg University, Helwan University	Egypt, Germany	Methodology
3	<a href="#">Targeting KEAP1/Nrf2, AKT, and PPAR-<math>\gamma</math> signals as a potential protective mechanism of diosmin against gentamicin-induced nephrotoxicity</a> (2021)	Al-Azhar University, Assiut University	Egypt	—
4	<a href="#">Untitled</a>	Bharathiar University	India	—
5	<a href="#">The nephroprotective effect of Quercetin in Cyclophosphamide-induced renal toxicity might be associated with MAPK/ERK and NF-<math>\kappa</math>B signal modulation activity</a> (2024)	Dicle University, Dokuz Eylul University, Mardin Artuklu University	Turkey	—
6	<a href="#">Oral delivery of nerolidol alleviates cyclophosphamide-induced renal inflammation, apoptosis, and fibrosis via modulation of NF-<math>\kappa</math>B/cleaved caspase-3/TGF-<math>\beta</math> signaling molecules</a> (2023)	Jamia Hamdard, Jamia Millia Islamia, King Abdulaziz University	India, Saudi Arabia	Methodology

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** Chemical Profiling of Polyphenolics in *Eucalyptus globulus* and Evaluation of Its Hepato-Renal Protective Potential Against Cyclophosphamide Induced Toxicity in Mice

“Additionally, the oxidative/nitrosative stress generated by CP is known to be associated with the subsequent activation of inflammatory cascades [19,30].”

**METHODOLOGY** Oral delivery of nerolidol alleviates cyclophosphamide-induced renal inflammation, apoptosis, and fibrosis via modulation of NF- $\kappa$ B/cleaved caspase-3/TGF- $\beta$  signaling molecules

“...(humphreys, 2018). tGF- $\beta$  is one of the well-explored and we-established pro-fibrotic markers in fibrotic disorders, including renal fibrosis (sharma et al., 2017). it is produced by infiltrating leukocytes as well as by renal cells. tGF- $\beta$  exists in the three isoforms, and all these isoforms...”

**D. Citing-Institution Prestige & Geography****Top citing institutions**

Institution	Country	World ranking	Citing papers
Government College University Faisalabad	Pakistan	SCImago #3109 · THE 601–800 · QS 761-770	2
Jouf University	Saudi Arabia	THE 601–800 · QS 901-950	2
King Abdulaziz University	Saudi Arabia	SCImago #680 · THE 351–400 · QS 163	2
Qassim University	Saudi Arabia	SCImago #3217 · THE 601–800 · QS 801-850	2
Al-Azhar University	Egypt	SCImago #4737 · THE 801–1000 · QS 1001-1200	2
Changchun University of Chinese Medicine	China	SCImago #8123	1
Bacha Khan University Charsadda	Pakistan	—	1
CSIR-Institute of Himalayan Bioresource Technology	India	—	1
Shaanxi Normal University	China	—	1
Delhi Pharmaceutical Sciences and Research University (DPSRU)	India	—	1
Universiti Kebangsaan Malaysia	Malaysia	SCImago #1091 · THE 301–350 · QS =126	1
The Second Hospital of Jilin University	China	—	1
Chitkara University	India	THE 601–800 · QS 1201-1400	1
Gwangju Institute of Science and Technology	South Korea	SCImago #1868 · THE 401–500 · QS =385	1
Qingdao Women and Children's Hospital, Qingdao University	China	—	1

### Geographic distribution of citing authors

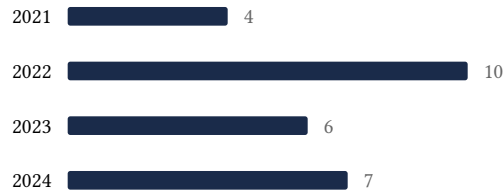
Country	Citing papers
China	10
India	9
Saudi Arabia	6
Pakistan	5
South Korea	4
Egypt	4
Iran	3
Germany	3
United States	2
Sweden	1
Turkey	1
United Kingdom	1

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

---

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.

<b>Contribution</b>	<b>Core paper</b>	<b>Indep. cites</b>	<b>Supports</b>
Contribution 1	Dietary Flavonoids Interaction with CREB-BDNF Pathway: An Unconventional Approach for Comprehensive Management of Epilepsy	8	Dhanasar – Prong 2 (well-positioned)
Contribution 2	Crocin attenuates kindling development and associated cognitive impairments in mice via inhibiting reactive oxygen species-mediated NF-κB activation	8	Dhanasar – Prong 2 (well-positioned)
Contribution 3	Iridoid glycosides fraction from Picrorhiza kurroa attenuates cyclophosphamide-induced renal toxicity and peripheral neuropathy via PPAR-γ mediated inhibition of inflammation and apoptosis	6	Dhanasar – Prong 2 (well-positioned)