

Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

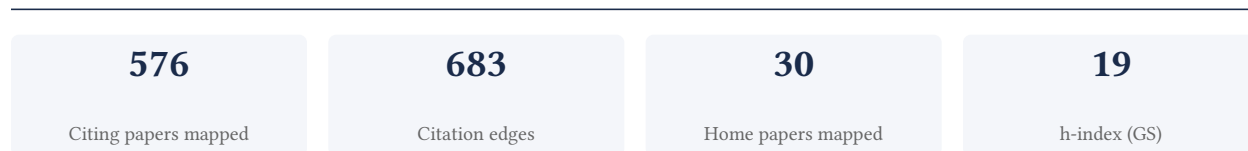
Anqi Chen

institute of chemical and engineering sciences

[Google Scholar profile](#)

Generated 2026-06-11 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.

97.9% independent of 528 classified citing papers

| Citation type | Count |
|------------------|-------|
| Independent | 517 |
| Self-citation | 9 |
| Co-author | 2 |
| Same-institution | 0 |

48 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 developed efficient heterogeneous catalytic systems for aminocarbonylation and related amidation reactions, establishing a foundational approach to sustainable organic synthesis that has been widely adopted by the independent scientific community.

The researcher's core contribution centers on the development of palladium nanoparticles supported on ZIF-8 as an efficient heterogeneous catalyst for aminocarbonylation, as detailed in a seminal 2013 paper. This work serves as the foundation for a broader line of inquiry into sustainable catalytic methods for forming amide bonds, a critical transformation in pharmaceutical and materials chemistry.

This line of work appears to address the need for robust, reusable catalytic systems that operate under milder conditions. Following the initial 2013 study, the researcher expanded this framework by investigating alternative catalysts, including 2-furanylboronic acid for direct amidation at room temperature and mesoporous niobium oxide spheres for transamidation. The chronological progression from metal-based heterogeneous systems to diverse catalytic materials suggests a systematic effort to optimize reaction efficiency and broaden the scope of applicable substrates.

The significance of this research is evidenced by its substantial uptake within the field. The core 2013 paper has accumulated 223 citations, while subsequent follow-up studies have garnered 69 and 53 citations respectively. Notably, analysis of citing literature indicates that 97.9% of citations originate from independent researchers, demonstrating that this work has influenced the broader scientific community beyond the researcher's immediate institution or collaboration network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 162

CORE PAPER

[Palladium nanoparticles supported on ZIF-8 as an efficient heterogeneous catalyst for aminocarbonylation](#)

2013 · 223 citations (GS)

Field-normalised: 172 Semantic Scholar citations place it in the top 5% of Chemistry papers from 2013 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|---|---------------------------|----|
| 1 | Tetravalent Boron-based Therapeutics | — | — | — |
| 2 | Nanomaterials via ZIF-8: preparations, catalytic and drug delivery applications | GLA University, Guru Ghansidas Vishwavidyalaya, Presidency University | India | — |
| 3 | Metal-organic frameworks: versatile heterogeneous catalysts for efficient catalytic organic transformations | State Key Laboratory of Advanced Technology For Materials Synthesis and Processing | China | — |
| 4 | Zeolitic imidazolate framework materials: recent progress in synthesis and applications | University of Exeter | United Kingdom | — |
| 5 | Application of metal and metal oxide nanoparticles@ MOFs | CSIRO Manufacturing, Institució Catalana de Recerca i Estudis Avançats, Institut Català de Nanociència i Nanotecnologia | Australia, Belgium, Japan | — |
| 6 | A review on zeolite imidazole frameworks: synthesis, properties, and applications | Ibb University, Yuvaraja's College (Autonomous) | India, Yemen | — |
| 7 | Buchwald-Hartwig reaction: an overview | Alzahra University | Iran | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|--|--------------------------------|----|
| 8 | Synthesis of pearl necklace-like ZIF-8@ chitosan/PVA nanofiber with synergistic effect for recycling aqueous dye removal | Institute for Color Science and Technology | Iran | — |
| 9 | Metal-organic frameworks as solid catalysts for the synthesis of nitrogen-containing heterocycles | Madurai Kamaraj University | India | — |
| 10 | Metal-organic frameworks and their catalytic applications | Kyoto University, University of Science and Technology of China | China, Japan | — |
| 11 | Recent developments in palladium catalysed carbonylation reactions | Institute of Chemical Technology | India | — |
| 12 | Zeolitic imidazolate frameworks: synthesis, functionalization, and catalytic/adsorption applications | Inha University | South Korea | — |
| 13 | Chloroform as a Carbon Monoxide Precursor: In or Ex Situ Generation of CO for Pd-Catalyzed Aminocarbonylations | University of Illinois Urbana-Champaign | United States | — |
| 14 | Synthesis and characterizations of ZIF-8/GO and ZIF-8/rGO composites for highly sensitive detection of Cu²⁺ ions | Jeonbuk National University, Najran University, University of Malaya | Greece, Malaysia, Saudi Arabia | — |
| 15 | Metals@ ZIFs: Catalytic applications and size selective catalysis | Wuhan University of Technology | China | — |
| 16 | Fabrication of Pd@ ZIF-8 catalysts with different Pd spatial distributions and their catalytic properties | The Synergetic Innovation Center for Advanced Materials | China | — |
| 17 | Dual-crosslinked networks of superior stretchability and toughness polyacrylamide-carboxymethylcellulose hydrogel for delivery of alendronate | Peking University Third Hospital | China | — |
| 18 | In situ generation of palladium nanoparticles: ligand-free palladium catalyzed pivalic acid assisted carbonylative Suzuki reactions at ambient conditions | Nanjing Normal University | China | — |
| 19 | Direct white-light-emitting and near-infrared phosphorescence of zeolitic imidazolate framework-8 | Beijing Normal University | China | — |
| 20 | Bimetallic alloy nanocrystals encapsulated in ZIF-8 for synergistic catalysis of ethylene oxidative degradation | Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences | China | — |
| 21 | Metal-organic framework grown in situ on chitosan microspheres as robust host of palladium for heterogeneous catalysis: Suzuki reaction and the p-nitrophenol ... | Ningde Normal University, Northeastern University | China, United States | — |
| 22 | Zeolitic imidazolate framework-68 as an efficient heterogeneous catalyst for chemical fixation of carbon dioxide | California Institute of Technology, Guangdong University of Technology | China, United States | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|--|--|----------------|----|
| 23 | Synthetic design of functional boron imidazolate frameworks | Chinese Academy of Sciences, Fujian Institute of Research on the Structure of Matter | China | — |
| 24 | Porous organic cage stabilised palladium nanoparticles: efficient heterogeneous catalysts for carbonylation reaction of aryl halides | Tsinghua University | China | — |
| 25 | Cascade reactions catalyzed by bionanostructures | Universidad Autónoma de Madrid | Spain | — |
| 26 | Co/Cu bimetallic ZIF as New heterogeneous catalyst for reduction of nitroarenes and dyes | Institute for Advanced Studies in Basic Sciences, Universidad de Alicante | Iran, Spain | — |
| 27 | Metal-organic framework templated electrodeposition of functional gold nanostructures | University of Manchester | United Kingdom | — |
| 28 | Palladium-catalyzed carbonylative synthesis of isoindolinones from benzylamines with TFBen as the CO source | Zhejiang Sci-Tech University | China | — |
| 29 | Mechanistic probes of zeolitic imidazolate framework for photocatalytic application | Argonne National Laboratory, Marquette University | United States | — |
| 30 | Post-synthesis functionalization of a zeolitic imidazolate structure ZIF-90: a study on removal of Hg (II) from water and epoxidation of alkenes | Inha University | South Korea | — |

Showing the 30 most-cited of 125 independent citing papers.

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

[2-Furanylboronic Acid as an Effective Catalyst for the Direct Amidation of Carboxylic Acids at Room Temperature](#)

2015 · 69 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|--|--|------------------------|----|
| 1 | Nonclassical routes for amide bond formation | Institut Charles Gerhardt Montpellier | France | — |
| 2 | Advances in nitroarene reductive amidations | University of Eswatini, University of Johannesburg | Eswatini, South Africa | — |
| 3 | Recent developments in amide synthesis using nonactivated starting materials | Universidad de los Andes | Colombia | — |
| 4 | Large-scale amidations in process chemistry: practical considerations for reagent selection and reaction execution | Pfizer | United States | — |
| 5 | Unique physicochemical and catalytic properties dictated by the B3NO2 ring system | Microbial Chemistry Research Foundation | Japan | — |
| 6 | Heterocyclic boron acid catalyzed dehydrative amidation of aliphatic/aromatic carboxylic acids with amines | Qingdao University of Science and Technology, State Key Laboratory of Materials-Oriented | China | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|--|---|---------------------|----|
| | | Chemical Engineering, Weifang University of Science and Technology | | |
| 7 | Iridium-Catalyzed Reductive Strecker Reaction for Late-Stage Amide and Lactam Cyanation | University of Oxford | United Kingdom | — |
| 8 | An Electrochemical Design for a General Catalytic Carboxylic Acid Substitution Platform via Anhydrides at Room Temperature: Amidation, Esterification, and ... | The Pennsylvania State University | United States | — |
| 9 | Boronic acid–DMAPO cooperative catalysis for dehydrative condensation between carboxylic acids and amines | Nagoya University | Japan | — |
| 10 | The ortho-substituent on 2, 4-bis (trifluoromethyl) phenylboronic acid catalyzed dehydrative condensation between carboxylic acids and amines | Nagoya University | Japan | — |
| 11 | Hafnium-catalyzed direct amide formation at room temperature | Stockholm University | Sweden | — |
| 12 | Mechanistic insight into asymmetric hetero-Michael addition of α, β-unsaturated carboxylic acids catalyzed by multifunctional thioureas | HUN-REN Research Centre for Natural Sciences, Kyoto University | Hungary, Japan | — |
| 13 | Manganese catalyzed direct amidation of esters with amines | Shihezi University, Zhengzhou University | China | — |
| 14 | Catalytic Dehydrative Peptide Synthesis with gem-Diboronic Acids | Kyoto University | Japan | — |
| 15 | Tetramethyl orthosilicate (TMOS) as a reagent for direct amidation of carboxylic acids | Imperial College London, Pfizer Ltd. | U.K, United Kingdom | — |
| 16 | Mechanistic elucidation of zirconium-catalyzed direct amidation | Stockholm University | Sweden | — |
| 17 | On the use of triarylsilanols as catalysts for direct amidation of carboxylic acids | Imperial College London, King's College London, Pfizer Ltd. | U.K, United Kingdom | — |
| 18 | Diboronic acid anhydrides as effective catalysts for the hydroxy-directed dehydrative amidation of carboxylic acids | Kitasato University | Japan | — |
| 19 | NMR quantification of hydrogen-bond-activating effects for organocatalysts including boronic acids | University of California | United States | — |
| 20 | High throughput experimentation as a tool to guide the microwave assisted catalytic amidation of aryl amines with aryl acids | Purdue University West Lafayette | United States | — |
| 21 | All Non-Carbon B3NO2 Exotic Heterocycles: Synthesis, Dynamics, and Catalysis | Institute of Microbial Chemistry, Microbial Chemistry Research Foundation | Japan | — |
| 22 | Straightforward α-Amino Nitrile Synthesis Through Mo(CO)₆-Catalyzed Reductive Functionalization of Carboxamides | Stockholm University, Umeå University | Sweden | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|---|--------------|----|
| 23 | Catalytic and non-catalytic amidation of carboxylic acid substrates | Endocrinology and Metabolism Clinical Sciences Institute, Tehran University of Medical Sciences, University of Tehran | Iran | — |
| 24 | 1, 3-Difunctionalization of Aminocyclopropanes via Dielectrophilic Intermediates | École Polytechnique Fédérale de Lausanne | Switzerland | — |
| 25 | A benzophenothiazine/boronic acid hybrid photocatalyst enables the single electron transfer (SET) to carboxy groups: SET-initiated cyclization of α, β-unsaturated ... | Kyoto University | Japan | — |
| 26 | Siloxo Esters as Traceless Activators of Carboxylic Acids: Boron-Catalyzed Chemoselective Asymmetric Aldol Reaction | Hokkaido University, The University of Tokyo | Japan | — |
| 27 | Dehydrative Condensation of Carboxylic Acids with Amines Promoted by HBF₄/MS 5A | Nagoya University | Japan | — |
| 28 | Visible-light-mediated amide synthesis in deep eutectic solvents | Universidad de Alicante, University of Calabria | Italy, Spain | — |
| 29 | Phenylsilane and silicon tetraacetate: versatile promoters for amide synthesis | Université de Caen Normandie | France | — |
| 30 | A calix [4] arene based boronic acid catalyst for amide bond formation: proof of principle study | — | — | — |

Showing the 30 most-cited of 37 independent citing papers.

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

[Mesoporous niobium oxide spheres as an effective catalyst for the transamidation of primary amides with amines](#)

2014 · 53 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

Contribution 2

Claim — Contribution 2

The researcher developed efficient synthetic routes for Tamiflu and related alkaloids using inexpensive d-ribose and shikimic acid derivatives, establishing a foundational methodology for complex pharmaceutical synthesis.

The researcher's core contribution centers on the efficient formal synthesis of Oseltamivir Phosphate (Tamiflu) utilizing inexpensive d-ribose as the starting material, as detailed in a seminal 2010 publication. This work established a cost-effective chemical pathway for producing a critical antiviral agent, addressing the need for accessible manufacturing methods during periods of high demand.

This line of work appears to address the challenge of simplifying complex pharmaceutical synthesis by leveraging readily available chiral pool materials. The subsequent 2011 publications suggest the researcher extended this methodological framework to

access (-)-shikimic acid derivatives and explore pattern recognition approaches for morphine alkaloid cores, indicating a broader application of these synthetic strategies to other biologically active compounds.

The significance of this research is evidenced by the core paper's 77 citations, with follow-up works accumulating additional citations. Notably, 97.9% of the scholar's total citing papers originate from independent researchers, demonstrating that this synthetic methodology has been widely adopted and validated by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 33 · 1 flagged influential by Semantic Scholar

CORE PAPER

[Efficient Formal Synthesis of Oseltamivir Phosphate \(Tamiflu\) with Inexpensive d-Ribose as the Starting Material](#)

2010 · 77 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|--|---|----------------------|-------------|
| 1 | Synthesis of carbocyclic and heterocyclic β-aminocarboxylic acids | University of Szeged | Hungary | — |
| 2 | Influenza neuraminidase inhibitors: synthetic approaches, derivatives and biological activity | Nanjing Agricultural University | China | Influential |
| 3 | Enantioselective synthesis of oseltamivir phosphate (Tamiflu) via the iron-catalyzed stereoselective olefin diazidation | Georgia State University | United States | — |
| 4 | Growing utilization of radical chemistry in the synthesis of pharmaceuticals | National Institute of Pharmaceutical Education and Research, University of Kansas | India, United States | — |
| 5 | Development of a Concise Synthesis of (-)-Oseltamivir (Tamiflu) | — | — | — |
| 6 | Synthesis of (-)-Oseltamivir by Using a Microreactor in the Curtius Rearrangement | Tokyo University of Science | Japan | — |
| 7 | Two Approaches toward the Formal Total Synthesis of Oseltamivir Phosphate (Tamiflu): Catalytic Enantioselective Three-Component Reaction Strategy and I... | Institute of Microbial Chemistry | Japan | — |
| 8 | Recent development in synthetic strategies for oseltamivir phosphate | Microbial Chemistry Research Foundation, The University of Tokyo | Japan | — |
| 9 | An efficient synthesis of oseltamivir phosphate (Tamiflu) via a metal-mediated domino reaction and ring-closing metathesis | Kasetsart University | Thailand | — |
| 10 | Unleashing the power of domino reactions on carbohydrates: State of the Art | University of Milan, University of Modena and Reggio Emilia | Italy | — |
| 11 | Several generations of chemoenzymatic synthesis of oseltamivir (Tamiflu): evolution of strategy, quest for a process-quality synthesis, and evaluation of efficiency ... | Brock University, CareerChem | Canada | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|---|------------------|----|
| 12 | A Practical and Azide-Free Synthetic Approach to Oseltamivir from Diethyl d-Tartrate | Sun Yat-sen University | China | — |
| 13 | Selective syntheses of novel highly functionalized β-aminocyclohexanecarboxylic acids | Hungarian Academy of Sciences, University of Szeged | Hungary | — |
| 14 | Use of the Diels–Alder adduct of pyrrole in organic synthesis. Formal racemic synthesis of Tamiflu | Yamaguchi University | Japan | — |
| 15 | A Synthesis of Oseltamivir (Tamiflu) Starting from d-Mannitol | Ewha Womans University | South Korea | — |
| 16 | A new access route to functionalized cis-pentacins from norbornene beta-amino acids | Egis Pharmaceuticals (Hungary), HUN-REN Research Centre for Natural Sciences, Institute for Medical Biology | Hungary, Poland | — |
| 17 | Synthesis and Structural Studies of α/β-Peptides Derived from Fused Furano-pyran β-Amino Acid and L-Ala | Indian Institute of Chemical Technology | India | — |
| 18 | Nucleotides and nucleic acids; oligo-and polynucleotides | MRC Laboratory of Molecular Biology | United Kingdom | — |
| 19 | Synthesis, Isolation and Characterization of Process-Related Impurities in Oseltamivir Phosphate | Jiwaji University | India | — |
| 20 | Formal Total Synthesis of (-)-Oseltamivir Phosphate | Asahi-Kasei EMD Corporation (Japan), Kobe University | Japan | — |
| 21 | Advances in the synthesis of antiviral agents from carbohydrate-derived chiral pools | Central University of Gujarat | India | — |
| 22 | A concise synthetic approach toward Tamiflu (oseltamivir phosphate): cis-aziridine as the key synthon and RCM | National Chemical Laboratory | India | — |
| 23 | A concise and practical synthesis of oseltamivir phosphate (Tamiflu) from D-mannose | Kasetsart University | Thailand | — |
| 24 | Selective nitrile oxide dipolar cycloaddition for the synthesis of highly functionalized β-aminocyclohexanecarboxylate stereoisomers | Hungarian Academy of Sciences, University of Jyväskylä, University of Szeged | Finland, Hungary | — |
| 25 | A new and efficient asymmetric synthesis of oseltamivir phosphate (Tamiflu) from D-mannose | Kasetsart University | Thailand | — |
| 26 | Ring-Closing Metathesis | North Carolina State University | United States | — |
| 27 | Stereospecific synthetic approach towards Tamiflu using the Ramberg–Backlund reaction from cysteine hydrochloride | CSIR – National Chemical Laboratory | India | — |
| 28 | Progress of Chiral Schiff Bases with C1 Symmetry in Metal-Catalyzed Asymmetric Reactions | Kobe University | Japan | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|----------------------------|---------|----|
| 29 | Synthesis, Isolation and Characterization of Process-Related Impurities in Oseltamivir Phosphate | Jiwaji University | India | — |
| 30 | Transformation of D-Serine to Highly Functionalized Cyclohexenecarboxylates in Study of Oseltamivir Synthesis | National Taiwan University | Taiwan | — |

Showing the 30 most-cited of 33 independent citing papers.

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

[Expeditious access to \(-\)-shikimic acid derivatives for Tamiflu synthesis](#)

2011 · 10 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

FOLLOW-UP WORK

[A pattern recognition approach to 14-epi-hydrophenanthrene core of the morphine alkaloids based on shikimic acid](#)

2011 · 9 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

Contribution 3

Claim — Contribution 3

The researcher developed an efficient total synthesis of aigialomycin D and subsequently explored its analogues as protein kinase inhibitors for cancer targets.

The researcher established a foundational contribution in natural product chemistry by publishing a seminal paper on the efficient and practical total synthesis of aigialomycin D in 2007. This core work provided a critical methodological advance for accessing this complex marine natural product, enabling further structural and biological investigation.

Building upon this synthetic achievement, the researcher extended the scope of the work in 2011 by exploring aigialomycin D and its analogues as protein kinase inhibitors for cancer targets. This progression suggests a deliberate strategy to translate synthetic accessibility into therapeutic potential, addressing the gap between chemical synthesis and pharmacological application in oncology.

The significance of this line of work is evidenced by substantial independent uptake. The core synthesis paper has garnered 59 citations, while the follow-up study on kinase inhibition has received 39 citations. Notably, 97.9% of the 528 classified citations for this scholar originate from independent researchers, indicating that the broader scientific community, rather than the researcher's immediate circle, has recognized and utilized these contributions.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 9

CORE PAPER

[An efficient and practical total synthesis of aigialomycin D](#)

2007 · 59 citations (GS)

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|--|---|------------------|----|
| 1 | Mitsunobu and related reactions: advances and applications | University of Hyderabad | India | — |
| 2 | Benzenediol lactones: a class of fungal metabolites with diverse structural features and biological activities | Southwest University | China | — |
| 3 | Aigialomycins and related polyketide metabolites from the mangrove fungus <i>Aigialus parvus</i> BCC 5311 | Mahidol University, National Center for Genetic Engineering and Biotechnology | Thailand | — |
| 4 | Learning from nature: advances in geldanamycin-and radicicol-based inhibitors of Hsp90 | University of Nottingham | United Kingdom | — |
| 5 | Total Synthesis of Aigialomycin D using a One-Pot Ketene Generation– Trapping– Aromatization Sequence | Imperial College, Imperial College London | United Kingdom | — |
| 6 | β-Keto-dioxinones and β, δ-diketo-dioxinones in biomimetic resorcylate total synthesis | Imperial College London | United Kingdom | — |
| 7 | A concise total synthesis of amphidinolide T2. | Hong Kong University of Science and Technology, Zhejiang University | China, Hong Kong | — |
| 8 | Stereoselective Total Synthesis of Aigialomycin D | Indian Institute of Chemical Technology | India | — |
| 9 | Organic synthesis using microwave heating | University of Graz | Austria | — |

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

[Exploring aigialomycin d and its analogues as protein kinase inhibitors for cancer targets](#)

2011 · 39 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

D. Citing-Institution Prestige & Geography

Top citing institutions

| Institution | Country | World ranking | Citing papers |
|--|-----------|-------------------------------|---------------|
| Institute of Chemical Technology | India | SCImago #2170 | 14 |
| Tarbiat Modares University | Iran | SCImago #3250 · THE 601–800 | 13 |
| Persian Gulf University | Iran | SCImago #9786 · THE 1201–1500 | 12 |
| Institute of Chemical and Engineering Sciences | Singapore | — | 11 |
| University of Kalyani | India | SCImago #9073 | 7 |
| China Pharmaceutical University | China | SCImago #800 · THE 1001–1200 | 6 |
| Kyoto University | Japan | SCImago #375 · THE 61 · QS 57 | 6 |

| Institution | Country | World ranking | Citing papers |
|---|---------|--|---------------|
| The University of Tokyo | Japan | SCImago #141 · THE 26 · QS =36 | 6 |
| Hunan University | China | SCImago #294 · THE 251–300 · QS =504 | 6 |
| University of Pannonia | Hungary | SCImago #5017 · THE 1501+ · QS 1201-1400 | 6 |
| Leibniz Institute for Catalysis | Germany | — | 6 |
| Stockholm University | Sweden | SCImago #578 · THE 201–250 · QS =147 | 6 |
| Nanjing Tech University | China | SCImago #742 · THE 601–800 | 6 |
| State Key Laboratory of Materials-Oriented Chemical Engineering | China | — | 6 |
| Central Salt and Marine Chemicals Research Institute | India | SCImago #7055 | 5 |

Geographic distribution of citing authors

| Country | Citing papers |
|----------------|---------------|
| China | 145 |
| India | 113 |
| Iran | 50 |
| United States | 33 |
| Japan | 32 |
| United Kingdom | 23 |
| France | 16 |
| South Korea | 12 |
| Hungary | 12 |
| Germany | 12 |
| Italy | 11 |
| Singapore | 11 |

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.

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 | Palladium nanoparticles supported on ZIF-8 as an efficient heterogeneous catalyst for aminocarbonylation | 162 | Dhanasar – Prong 2 (well-positioned) |
| Contribution 2 | Efficient Formal Synthesis of Oseltamivir Phosphate (Tamiflu) with Inexpensive d-Ribose as the Starting Material | 33 | Dhanasar – Prong 2 (well-positioned) |
| Contribution 3 | An efficient and practical total synthesis of aigialomycin D | 9 | Dhanasar – Prong 2 (well-positioned) |