

Mohamad Aman Jairajpuri, Ph.D

Professor

Current Address:

**Mohamad Aman Jairajpuri
Professor
Protein Conformation and Enzymology Lab-404
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New-Delhi-110025
India**



Area of Research

The serpins (**serine proteinase inhibitors**) are structurally similar but functionally diverse proteins that fold into a conserved structure and employ a unique suicide substrate-like inhibitory mechanism. Serpins like α -antitrypsin, α -antichymotrypsin, C1-inhibitors, antithrombin and plasminogen activator inhibitor-1, play absolutely critical role in the control of proteinases involved in the inflammatory, complement, coagulation and fibrinolytic pathways respectively, and are associated with diseases like emphysema/cirrhosis, angioedema, familial dementia, chronic obstructive bronchitis and thrombosis. Serpins are delicately balanced to perform its function with many critical residues involved in maintaining metastability. However due to its typical mechanism of inhibition, naturally occurring serpin variants produces conformational instability which consequently forms the basis of many pathological disorders. Understanding the molecular basis of such defects is central to devising strategies for its cure.

Academic Qualification

S.No.	Position Held	From	To	Name of Institutes
1.	Professor	Jan 2013	Till Date	JMI
2.	Associate Professor	Jan2010	Jan2013	JMI
3.	Reader	Jan2007	Jan2010	JMI
4.	Assistant Research Professor	July2006	Jan2007	PulmonaryDiv,Department of Medicine, University of Utah, Salt Lake City, UT-84132, USA
5.	Instructor	Jan2003	Jun2006	Department of Medicine, University of Utah, USA
6.	American Heart Association Postdoctoral Fellow	Jun2000	Jun2002	Department of Medicine University of Utah, USA
7.	Postdoctoral Fellow	Oct1998	Jun2000	Department of Medicine University of Utah, USA
8.	Indian Institute of Technology -Mumbai	1996	1998	Senior Research Fellow
9.	Indian Institute of Technology-Mumbai	1994	1996	Junior Research Fellow

Education:

- 02/2000 **Ph. D.**, Biotechnology, Biotechnology Center, **Indian Institute of Technology**, Powai, Bombay Mumbai-400076, India
- 06/1992 **M. Sc.**, Bio-Sciences, Grade: **First Class**,
University of Jamia Millia Islamia, New-Delhi 110 025, India
- 07/1990 **B. Sc.**, Physics, Chemistry and Math's, Grade: **First Class, 2nd Position**
University of Jamia Millia Islamia, New-Delhi 110 025, India

Academic Honors

- 04/2003 **International Society of Thrombosis and Haemostasis-Young Investigator Travel Award, USA**

01/2003-12/2006 **Principal Investigator on prestigious-American Heart Association-Scientist Development Grant, USA**
07/2000 - 06/2002 **American Heart Association Western States Affiliate-Post Doctoral Fellowship, USA**
10/1998 - 06/2003 **Post Doctoral Fellowship at Department of Medicine, University of Utah, Salt Lake City, UT-84132, USA**
01/1996 - 07/1998 **Senior Research Fellowship, Indian Institute of Technology, Bombay, India**
01/1994 – 12/1995 **Junior Research Fellowship, Indian Institute of Technology, Bombay, India**

Courses taught at postgraduate and Undergraduate Level

- Molecular Genetics (M.Sc. Biosciences) 2007-2013
- Animal Physiology (B.Sc. Biosciences) 2007-2014
- Neurobiochemistry (M.Sc. Biochemistry) 2007-2015
- Cell Biology (M.Sc. Biosciences). 2012-Till Date
- Introduction to Bioinformatics (M.Sc. Bioinformatics) 2007-2008
- Animal Physiology (M.Sc Biosciences) 2007-2009
- Developmental Biology (B.Sc. Biology) 2017-Till Date

Project Work as Principal Investigator/Co-Investigator

<i>S.No.</i>	<i>Title</i>	<i>Institute/University</i>	<i>Period</i>
1.	Contribution of Intramolecular Reactive Loop Stabilization in Antithrombin Structure-Function (PI)	American Heart Association AHA reference Code:	2000-2002
2.	Understanding the Conformational Activation of Antithrombin III by Heparin (PI)	American Heart Association-Scientist Development Grant AHA reference Code: 0330145N	2003-2006
3.	Understanding the Effectiveness of Chemical Chaperones in Preventing Serine Protease Inhibitors Polymerization (PI)	Department of Biotechnology (DBT)	2008-2013
4.	Understanding the Role of Low and High Affinity Heparin Interactions in Modulating Antithrombin Conformations for its Antiangiogenic Function (PI)	University Grant Commission (UGC)	2009-2012
5.	Analysis of structural and mechanistic basis of natural variants of antithrombin from Indian families with thrombosis. (PI)	Indian Council of Medical Research (ICMR)	2011-2014
6.	Designing and structure-function characterization of antithrombin specific non-heparin coagulation modulators with ability to inhibit thrombosis in vivo (PI)	Department of Science and Technology (DST)-SERB	2016-2019
7.	Designing and characterization of FRET based nano-sensors for detection of metals in vivo (CO-PI)	Department of Biotechnology	2016-2019
8.	Detection and structure function characterization of novel alternatively spliced isoforms of human Serpins (PI)	Department of Biotechnology	2018-2021

Projects guided at Postgraduate (Masters) Level

Masters Projects

S.No.	Name	Year
1	<i>Apoorv Sharma</i>	M.Sc Project –2008

2	<i>Kusum Nahwal</i>	M.Sc Project –2008
3	<i>Zeba Siddiqui</i>	M.Sc Project –2009
4	<i>Gaurav Dey</i>	M.Sc Project –2009
5	<i>Neha Sinha</i>	M.Sc Project –2009
6	<i>Khushboo Singh</i>	B.Tech Project 2009
7	<i>Tribhuwan Singh</i>	M.Sc Project 2010
8	<i>Sunil Kumar Dubey</i>	M.Sc. Project 2010
9	<i>Pankaj Pandey</i>	M.Sc Project 2010
10	<i>Niangthianvung</i>	M.Sc Project 2010
11	<i>Monica Batra</i>	M.Sc Project-2011
12	<i>Monica- Pal</i>	M.Sc Project-2011
13	<i>Teena Bakhuni</i>	M.Sc Project-2011
14	<i>Bheemraj Ranga</i>	M.Sc Project-2012
15	<i>Rashid Husain</i>	M.Sc Project-2012
16	<i>Samiya Deebea</i>	M.Sc Project-2013
17	<i>Huma Jamal</i>	M.Sc Project-2013
18	<i>Haseena Najnin</i>	M.Sc Project-2014
19	<i>Mohammad Shoeb</i>	M.Sc Project-2014
20	<i>Juveria Khan</i>	M.Sc Project-2015
21	<i>Purbasha Bhattacharya</i>	M.Sc Project-2015
22	<i>Shanavaz</i>	M.Sc Project-2016
23	<i>Imran</i>	M.Sc Project-2016
24	<i>Nupur Sharma</i>	M.Sc Project-2017
25	<i>Pariwash Rana</i>	M.Sc Project-2017
26	<i>Yasmeen Jahan</i>	M.Sc Project-2017
27	<i>Muzzaffar Quadri</i>	M.Sc Project-2017
28	<i>Majid Hussain Naik</i>	M.Sc Project-2018
29	<i>Ishra Warsi</i>	M.Sc Project-2018
30	<i>Palwasha Walizada</i>	M.Sc Project-2018
31	<i>Saquib Ansari</i>	M.Sc Project-2018
32	<i>Zainul Haq</i>	M.Sc Project-2019
33	<i>Zoofishan Anjum</i>	M.Sc Project-2019
34	<i>Iqra</i>	M.Sc Project-2019
35	<i>Ghazala Parveen</i>	M.Sc Project-2019
36	<i>Mohd. Mohsin</i>	M.Sc Project-2019
37	<i>Nabeel Ahmad</i>	M.Sc Project-2019
38	<i>Saman Nasir</i>	M.Sc Project-2020
39	<i>Chanu</i>	M.Sc Project-2020

Ph.D students

Fellowships Availed

1.	Sazzad Khan (Awarded)-	ICMR-RA
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Topic:	Preventing Serine Protease Inhibitors Polymerization Using Chemical Chaperones: Understanding the Mechanism of Polymerization
2.	Poonam Singh (Awarded) Rajeev Gandhi National Fellowship-SRF
Topic:	Computational Analysis of Structure Function and Evolution of Serine Protease Inhibitor Super-family
3.	Asim Azhar (Awarded) ICMR-SRF
Topic:	Structure function study of different conformation of Serine Protease Inhibitor Superfamily for its antiangiogenic function.
4.	Asma Naseem (Awarded) CSIR-SRF
Topic:	Effectiveness of chemical chaperones in Depolymerization of Serine Protease Inhibitors
5.	Qudsia Rashid (Awarded) CSIR-SRF
Topic:	Structure-function analysis of Antithrombin
6.	Charu Kapil (Awarded) ICMR-SRF
Topic:	Bioinformatics-based genomic and proteomic analyses of malaria parasite Plasmodium falciparum
7.	Farhan Ahmad (Awarded) CSIR-JRF
Topic:	Structure function analysis of neuroserpin for its role in human diseases
8.	Teena Bakhuni (Awarded) INSPIRE-JRF
Topic:	Understanding the structural and mechanistic role of antithrombin in thrombosis.
9.	Shazia Ashraf (Awarded) ---
Topic:	Identification and functional characterization of novel genes mutated in nephrotic syndrome
10.	Irshad (Submitted) ICMR-RA
Topic:	Synthesis and Structure Function analysis of novel coagulation modulators
11.	Shoyab Ansari (Pre-Synopsis planned) DBT-JRF
Topic:	Identification and assessment of critical residues involved in neuroserpin inhibition and polymerization.
12.	Shadabi Bano (Pre-Synopsis Planned) DBT-JRF
Topic:	Understanding the role of serpin in coagulation mechanism and thrombosis
13.	Neha Soleja (as Co-Supervisor-submitted) UGC-JRF Construction of a family of FRET based nanosensors for detecting metal ions
14.	Burhan Khan (Ongoing) Non-NET JRF
15.	Sana Fatima (Ongoing) DBT-JRF
16.	Urfi Siddiqui (Ongoing) DBT-JRF

Former Ph.D. Students:

Poonam Singh

Former Position: Postdoc (Bioinformatics Institute) (A*star) Singapore

Current Position: Project Manager, Dept. of Biotechnology. Govt. of India

Asma Naseem

Postdoc (ICGEB), Italy

Charu Kapil

Former Position : Scientific Coordinator, French Embassy

Current Position: Data Scientist, Dynamics Intelligence, Seattle, USA

Asim Azhar-

SERB-IUSSTF Posdoc at Rosalind Franklin University of Medicine and Science in Chicago, USA

Qudsia Rashid-

Guest lecturer—Kashmir University

Teena Bhakuni-

National Posdoctoral Fellowship-DST

Current Position: Posdoctoral Fellowship, Osaka, Japan

Farhan Ali-

National Posdoctoral Fellowship-DST-JNU, India

Shazia Ashraf

Postdoctoral fellow, Harvard Medical School, Boston USA.

Former Posdoc Fellows

1. Mohammad Mohsin-UGC-Kothari Posdoc Fellowship

Current Position: **Assistant Professor**, Dept of Biosciences, JMI.

2. Dr. Sayeed Ur Rehman-UGC-Kothari Postdoctoral Fellowship DAAD Postdoctoral Research Fellow-Germany

Current Position: **Assistant Professor**, Dept. of Biochemistry,
Hamadard University.

3. Neha Gupta-National Posdoc Fellowship-DST

Current Postion: **INSPIRE faculty**, JMI.

4. Dr. Mohammed Amir Husain DST-National Postdoctoral Fellowship

Current Position: **Postdoctoral Fellow**, Hebrew University, Isreal

5. Parvez Ahmad UGC-Kothari Postdoctoral Fellowship

Guest Faculty: Dept. of Biotechnology, Biosciences, JMI.

Thesis Examiner:

University of Delhi, Aligarh Muslim University, Kashmir University, Guru Nanak Dev University, Bhartiya University, DRDO, IIIM-Jammu, AIIMS-New Delhi, Hamdard University.

Membership:

Society of Biological Chemist
Indian Biophysical Society
American Heart Association-(2000-2008)

Reviewer of Journals

Reviewer of Journals

Immunobiology

Angiogenesis

Plos One

Structural Biology

Annals of Human Genetics

Life Sciences

Journal of Molecular Liquids

Biological Chemistry

Andrologia

Assay and Drug Development

International Journal of Biological Macromolecule

Progress in Biophysics and Molecular Biology

Plant Gene

Cardiovascular & Hematological Agents in Medicinal Chemistry

International Journal of Hematology Research

Journal of International Medical Research

Journal of Protein and Proteomics

Journal of Pharmacy and Bioallied sciences,

Journal of Biomolecular structure and Dynamics

Patents:

1. Indian Patent filed: *A method to reduce in vivo thrombus formation and platelet aggregation using Quercetin 3, 3', 4', 5, 7-O- pentasulfate, as a potential antithrombotic and antiplatelet agent* (Application Number: 201611032665)

2. Indian Patent filed: *A method for reduction of in vivo thrombus formation using Diosmin 2'',2''',3',3'',3''',4'',4''',5-O-octasulfate (DOS), as a potential antithrombotic agent* (Application Number: 201811006488)

3. **Indian Patent filed:** *A method to reduce thrombus formation using Esculin 7, 3', 4', 5', 6'-O-pentasulfate (EPS) as a promising antithrombotic agent.* (Application Number: 201811006489)

4. **Indian Patent filed:** *A method to reduce in vivo thrombus formation using Mannose 2,3,4,5,6-O-pentasulfate as a novel antithrombotic agent.* (Application No. 201811042125)

5. **Indian Patent filed:** (Application No. 201811042125)

Selected publications

Parvez Ahmad^a, Irfan Qadir Tantry^b, Asif Ali^b, Shahid Ali Siddiqui^c, Sayeed ur Rehman^d, Sana Waris^b, and Mohamad Aman Jairajpuri^{a,*}

Structural alteration in hypochlorous acid modified antithrombin indicates generation of neo-epitopes

Archives of Biochemistry and Biophysics (Under Revision-2020)

Teena Bhakuni¹, Amit Sharma², Arijit Biswas³, Shadabi Bano¹, Manoranjan Mahapatra², Renu Saxena², Mohamad Aman Jairajpuri¹

Identification and characterization of a novel variant in C-terminal region of Antithrombin (Ala427Thr) associated with type II AT deficiency leading to polymer formation

Journal of Thrombosis and Thrombolysis (Accepted-2020)

Mohammad Farhan Ali, Abhinav Kaushik, Dinesh Gupta, Shoyab Ansari and Mohamad Aman Jairajpuri*

Changes in strand 6B and helix B during neuroserpin inhibition: Implication in severity of clinical phenotype

BBA-Protein and Proteomics (Accepted-2020)

Sayeed ur Rehman, Shazia Ashraf, Shahzaib Ahamad, Tarique Sarwar, Mohamad Amir Husain, Parvez Ahmad, Mohammad Tabish, Mohamad Aman Jairajpuri*¹

Identification of a novel alternatively spliced isoform of antithrombin containing an additional RCL-like loop

Biochemical and Biophysical Research Communications (BBRC-Accepted-2019)

Asma Naseem, Mohammad Sazzad Khan, Hashim Ali, Irshad Ahmad and Mohamad Aman Jairajpuri*

Deciphering the role of trehalose in hindering antithrombin polymerization

Bioscience Reports (Accepted-2019)

Soleja, Neha, Manzoor, Ovais, Mohamad Aman Jairajpuri, Mohsin, Mohd

Genetically encoded FRET-based optical sensor for Hg²⁺ detection and intracellular imaging in living cells

Journal of Industrial Microbiology & Biotechnology (Accepted-2019)

Shazia Ashraf , Hiroki Kudo , Dr. Rao Jia , Dr. Atsuo Kikuchi , Eugen Widmeier , Jennifer Lawson , Weizhen Tan , Tobias Hermle , Jillian Warejko , Shirlee Shril , Merlin Airik , Tilman Jobst-Schwan , Svjetlana Lovric , Dr. Daniela A. Braun , Prof. Heon Yung

Gee , David Schapiro , Dr. Amar Majmundar , Dr. Carolin Sadowski , Werner Pabst , Ankana Daga , Amelie van der Ven , Johanna Schmidt , Prof. Boon Chuan Low , Anjali Gupta , Brajendra Tripathi , Jenny Wong , Prof. Kirk Campbell , Kay Metcalfe , Dr. Denny Schanze , Dr. Tetsuya Niihori , Dr. Hiroshi Kaito , Dr. Kandai Nozu , Hiroyasu Tsukaguchi , Dr. Ryojiro Tanaka , Kiyoshi Hamahira , Dr. Yasuko Kobayashi , Takumi Takizawa , Dr. Ryo Funayama , Prof. Keiko Nakayama , Prof. Yoko Aoki , Dr. Naonori Kumagai , Kazumoto Iijima , Henry Fehrenbach , Jameela Kari , Sherif Desoky , Dr. Sawsan Jalalah , Dr. Radovan Bogdanovic , Nataša Stajić , Hildegard Zappel , Dr. Assel Rakhmetova , Sharon-Rose Wassmer , Therese Jungraithmayr , Juergen Strehlau , Aravind Kumar , Arvind Bagga , Prof. Neveen Soliman , Dr. Shrikant Mane , Lewis Kaufman , Dr. Douglas Lowy , **Mohamad Jairajpuri** , Dr. Richard Lifton , York Pei , Prof. Martin Zenker , Prof. Shigeo Kure

Mutations in six nephrosis genes delineate a pathogenic pathway amenable to treatment
Nature Communications • *Nature Communications* **volume 9**, Article number: 1960
(2018) • doi:10.1038/s41467-018-04193-

**Irshad Ahmad¹, Swati Sharma², Neha Gupta¹, Qudsia Rashid¹, Mohammad Abid³,
Mohammad Z Ashraf², Mohamad Aman Jairajpuri^{1*}**

Antithrombotic potential of esculin 7, 3', 4', 5', 6'-O-Pentasulfate (EPS) for its role in thrombus reduction using rat thrombosis model

(International Journal of Biological Macromolecule-Accepted)-2018

**Mohammad Farhan Ali¹, Abhinav Kaushik², Charu Kapil¹, Dinesh Gupta² and Mohamad
Aman Jairajpuri^{1*}**

A hydrophobic patch surrounding Trp154 in human neuroserpin controls the helix F dynamics with implications in inhibition and aggregation

Scientific Reports• *Scientific Reports* **volume 7**, Article number: 42987 (2017)

• doi:10.1038/srep42987

**Amit Sharma, Teena Bhakuni, Arijit Biswas, Ravi Ranjan, Ravi Kumar, Kamal Kishore,
Manoranjan Mahapatra, Mohamad Aman Jairajpuri, Renu Saxena**

Prevalence of factor V genetic variants associated with Indian APCR contributing to thrombotic risk

Clinical and Applied Thrombosis/Hemostasis Volume: 23 issue: 6, page(s): 596-600
Sep 1, 2017.

Jia Rao,* Shazia Ashraf*, Weizhen Tan, Amelie T. van der Ven, Heon Yung Gee1, Daniela A. Braun, Krisztina Fehér, Sudeep P. George, Amin Esmaeil, Won-II Choi, Tilman Jobst-Schwan, Ronen Schneider, Johanna Magdalena Schmidt, Eugen Widmeier, Jillian K. Warejko, Tobias Hermle, David Schapiro, Svjetlana Lovric, Shirlee Shril, Ankana Daga, Ahmet Nayir, Mohan Shenoy, Vincent Tse, Martin Bald, Udo Helmchen, Sevgi Mir, Afig Berdeli, Jameela A. Kari, Sherif El Desoky, Neveen A. Soliman, Arvind Bagga, Shrikant Mane, **Mohamad A. Jairajpuri**, Richard P. Lifton, Seema Khurana, Jose C. Martins and Friedhelm Hildebrandt

Advillin mutations delineate a comprehensive pathogenic pathway for steroid-resistant nephrotic syndrome

Journal of Clinical Investigation-*J Clin Invest.* **2017**;127(12):4257-4269.

<https://doi.org/10.1172/JCI94138>.

Teena Bhakuni¹, Amit Sharma², Mohammad Farhan Ali¹, Manoranjan Mahapatra², Renu Saxena², **Mohamad Aman Jairajpuri**^{1#}

Identification of two novel polymorphisms and rs3138521 in 5'-Untranslated region of SERPINC1 gene in North-Indian Deep Vein Thrombosis population

Clinical and Applied Thrombosis/Hemostasis-Volume: 23 issue: 7, page(s): 865-870 -2017

Teena Bhakuni, Mohammad Farhan Ali, Irshad Ahmad, Shadabi Bano, Shoyab Ansari, **Mohamad Aman Jairajpuri***

Role of heparin and non heparin binding serpins in coagulation and angiogenesis: A complex interplay

Archives of Biochemistry and Biophysics Volume 604, 15 August 2016, Pages 128–142-2016

Asim Azhar[#], Mohammad Sazzad Khan[#], Akila Swaminathan[§], Asma Naseem[#], Suvro Chatterjee[§], **Mohamad Aman Jairajpuri**^{#*}

Oxidized antithrombin is a dual inhibitor of coagulation and angiogenesis: Importance of low heparin affinity

International Journal of Biological Macromolecule-Vol 82, January, P 541–550-2016

Johnson, E.T., Skory, C.D., Naumann, T.A., Jairajpuri, M.A., Dowd, P.F.

Three sorghum serpin recombinant proteins inhibit midgut trypsin activity and growth of corn earworm.

Agri Gene (Elsevier)- Volume 2, December 2016, Pages 11–16-2016

Babita Aneja, Mohammad Irfan, Charu Kapil, Mohamad A Jairajpuri, Ronan Maguire, Kevin Kavanagh, Mohammad M Rizvi, Nikhat Manzoor, Amir Azam and MOHAMMAD ABID Effect of novel triazole-amino acid hybrids on growth and virulence of Candida species: In vitro and in vivo studies

Org. Biomolecular. Chem. *14*, 10599-10619-2016

Babita Aneja, Bhumika Kumar, Mohamad Aman Jairajpuri, Mohammad Abid*
Structure Guided drug-discovery approach towards identification of Plasmodium Inhibitors

Royal Society of Chemistry (advances)- *RSC Adv.*, 2016,6, 18364-18406 -2016

Teena Bhakuni¹, Amit Sharma², Qudsia Rashid¹, Charu Kapil¹, Renu Saxena², Manoranjan Mahapatra², Mohamad A. Jairajpuri^{1,*}

Antithrombin III deficiency in Indian patients with deep vein thrombosis: Identification of first India based AT variants including a novel point mutation (T280A) that leads to aggregation

PLoS One. 2015 Mar 26;10(3):e0121889. doi: 10.1371/journal.pone.0121889.

Qudsia Rashid, Charu Kapil, Poonam Singh, Vineeta Kumar, Mohamad Aman Jairajpuri*

Understanding the specificity of Serpin-Protease complexes through interface analysis

J Biomol Struct Dyn. 2015 Jun;33(6):1352-62. doi: 10.1080/07391102.2014.947525.

Qudsia Rashid, Mohammad Abid, Neha Gupta, Tarun Tyagi, Mohd, Zahid Ashraf,
Mohamad Aman Jairajpuri*

Polysulfated Trehalose as a novel anticoagulant agent with dual mode of action
BioMed Research International, vol. 2015, Article ID 630482, 11 pages, 2015.

Amit Sharma, Teena Bhakuni, Ravi Ranjan, Ravi Kumar, Kamal Kishor, Vineet Kumar
Kamal, Manoranjan, Mahapatra, Mohamad Aman Jairajpuri, Renu Saxena

Polymorphisms in Factor V and Antithrombin III gene in recurrent pregnancy loss: A
case-control study in Indian population

Journal of Thrombosis and Thrombolysis- 2015 Mar 14. [Epub ahead of print]

Dhakaram Pangeni; Charu kapil; Mohamad Aman Jairajpuri; Priyankar Sen

Inter-domain helix h10DOMI-h1DOMII plays an important role in molecular interaction
of bovine serum albumin with curcumin: A spectroscopic and computational analysis

European Biophysics Journal- 2015 Apr;44(3):139-48. doi: 10.1007/s00249-015-1009-
x. Epub 2015 Feb 5.

Mir Mohammad Masooda, Vijay K. Pillalamarrib, Mohammad Irfana, Babita Anejaa,
Mohamad Aman Jairajpuric, Md. Zafaryabd, M. Moshahid A. Rizvid, Umesh Yadavae,
Anthony Addlagattab, Mohammad Abid*,

Diketo acids and their amino acid/dipeptidic analogues as promising scaffolds for the
development of bacterial methionine aminopeptidase inhibitors

Royal Society of Chemistry (advances)-2015-5, 34173-34183

Qudsia Rashid[†], Mohammad Abid[§], Mohamad Aman Jairajpuri^{#*}

Elucidating the specificity of non-heparin based conformational activators of
antithrombin for factor Xa inhibition..

(J. Nat. Sc. Biol. Meds.-- 2014 Jan;5(1):36-42. doi: 10.4103/0976-9668.127282) 2014

Poonam Singh and Mohamad Aman Jairajpuri^{#*}

Structure Function Analysis of Serpin Super-family: "A Computational Approach".

(Protein Pept Lett. [2014, 21(8):714-721]) 2014

Gupta P*, Mohamad Aman Jairajpuri* and Susheel Durani. *Joint first authors

Redox Specificity of 2-Hydroxyacid-Coupled NAD⁺/NADH Dehydrogenases: A Study
Exploiting "Reactive" Arginine as a Reporter of Protein Electrostatics

(PLOS One-2013 (8(12)) . e83505. doi:10.1371/journal.pone.0083505

Saleem K, Wani WA., Ashanul H, Lone MN, Hsieh M, Jairajpuri MA, Ali A.,

Synthesis, DNA Binding, Hemolysis Assays and Anticancer studies of Copper (II),
Nickel (II) and Iron (III) complexes of a Purazoline based Ligand.

Future Medicinal Chemistry--2013, Vol. 5, No. 2, Pages 135-146.

Kapil C, Hussain T, Jairajpuri MA, Yogavel M, Chatterjee S, Sharma A.

Systematic analysis of proteomes with emphasis on insertions in malaria parasite
Plasmodium falciparum.

Protein Pept Lett. 2013 Oct;20(10):1088-97

Azhar A, Singh P, Rashid Q, Naseem A, MS Khan and Jairajpuri MA*.

Antiangiogenic function of antithrombin is dependent on its conformational variation: Implication for other serpins.

Protein Pept Lett. 2013 Apr;20(4):403-11.

Jairajpuri MA*

Towards understanding of helix B based conformational diseases in serpin

Journal of Protein and Proteomics 3(2), 149-154. 2012

Qudsia Rashid[#], Poonam Singh, Mohammad Abid[§], Mohamad Aman Jairajpuri^{#*}

Limitations of conventional anticoagulant therapy and the promises of non heparin based conformational activators of Antithrombin.

Journal of Thrombosis and Thrombolysis—2012 ; 34: 251-9.

Singh P, Khan MS, Naseem A, Jairajpuri MA*. Analysis of surface cavity in serpin family reveals potential binding sites for chemical chaperone to reduce polymerization.

J Molecular Modeling. 2012 Mar;18(3):1143-51.

Singh P, Singh K, Jairajpuri MA. Energetics of hydrogen bond switch, residue burial and cavity analysis reveals molecular basis of improved heparin binding to antithrombin.

J Biomol Struct Dyn. 2011 Oct; 29(2):339-50.

Khan MS , Singh P, Azhar A, Naseem A, Rashid Q, Kabir MA and Jairajpuri MA*. “Serpine Inhibition Mechanism : A Delicate Balance between Native Metastable State and Polymerization,”

J Amino Acids. 2011;2011:606797. Epub 2011 May 24.

Kabir A, Ahmad Z, Uddin W, Narayanan A, Reddy PK, Jairajpuri MA and Fred Sherman F. Functional residues of eukaryotic chaperonin CCT/TRiC in protein folding

J Amino Acids. 2011;2011:843206. Epub 2011 Jul 2.

Singh P and Jairajpuri MA*. “Strand 6B deformation and residues exposure towards Nterminal end of helix B during proteinase inhibition by Serpins,”

Bioinformatics, vol 5, no. 8, pp. 315-319, 2010.

Bhatt TK, Kapil C, Khan S, Jairajpuri MA, Sharma V, Santoni D, Silvestrini F, Pizzi E, Sharma A. Genomic glimpse of aminoacyl-tRNA synthetases in malaria parasite Plasmodium A falciparum.

BMC Genomics Dec 31; 2009, 10:644

De La Cruz R, Jairajpuri MA and Bock SC. Disruption of a Tight Cluster Surrounding Tyrosine-131 in the Native Conformation of Antithrombin III Activates it for Factor Xa Inhibition

J. Biol. Chem., Vol. 281, Issue 42, 31668-31676, 2006

Jairajpuri MA, Desai U, Lu A, Olson ST, Bjork I and Bock SC. Contribution of Hydrophobic Residues Phe122 and Phe-121 of Antithrombin III to Heparin Binding and Activation.

J Biol Chem. 278(18):15941-15950, (2003)

Jairajpuri MA, Lu A and Bock SC. Elimination of P1 Arginine-393 Interaction with Underlying Glutamic Acid-255 Partially Activates Antithrombin III for Thrombin Inhibition but not for Factor Xa Inhibition.

J. Biol.Chem. 277, 24460 (2002).

Jairajpuri MA, Azam N, Baburaj K, Bulliraju E and Durani S., Charge and Solvation Effects in Anion Recognition Center: An Inquiry Exploiting Reactive Arginines.

Biochemistry, 37, 10780-10791, (1998)

Book Chapter

Mohd. Mohsin , Altaf Ahmad, Mohamad Aman Jairajpuri, Razi Ahmad (2015)

FRET Based Genetically-Encoded Nanosensor: A Tool for in vivo Monitoring of the Amino Acid Dynamics. Bhupendra Singh (ed) Nanotechnology: Novel Perspectives and Prospects, pp. 370-377, Tata McGraw Hill