

Curriculum Vitae of Amit Kumar

Name Amit Kumar

**Contact
Information**

Department of Mech. Eng. Chem. and Materials
University of Cagliari.
Via Marengo 2, Cagliari. 09123.
Italy.

CRS4, BioEngineering Group
Science and Technology Park Polaris
Piscina Manna, 09010 Pula (CA).
Italy.

Date of Birth 22nd February 1982.

Nationality Indian

**Educational
Qualifications**

PhD (Physics)	Department of Physics, University of Cagliari, Italy. (Dec 2006-Dec 2009)
M. Sc (Physics)	Sri Sathya Sai Institute of higher learning, Prashanthi Nilayam, Andra Pradesh. India. (2002-2004). GPA: 4.84 (on 5 scale)
B. Sc (Physics)	Sri Sathya Sai Institute of higher learning, Bangalore, Karnataka. India. (1999-2002). GPA: 4.27 (on 5 scale)

**Work
Experience**

Researcher Department of Biomedical Sciences
University of Cagliari, Italy.
(July 2012 - Oct 2014)

Researcher Department of Public Health and Clinical
Molecular Medicine, University of Cagliari,
Italy. (April 2011- June 2012)

Researcher CNR-IOM, Department of Physics,
Cagliari, Italy. (Jan 2010 – July 2010)

Scientific IWR, University of Heidelberg.
Co-Worker Germany. (August 2005 – December 2006)

Project Assistant Indian Institute of Technology, Bombay.
Mumbai. India (June 2004 – July 2005)

Computational Skills

Platform Linux, Unix, Windows
Programming Fortran 90, Python, tcl scripting, R
Scientific Software CHARMM, AMBER, NAMD,
AUTODOCK
Visual software VMD, Pymol
Plotting software's Xmgrace, Gnuplot, Matlab

Awards & Scholarships

Marie Curie Early Stage Researcher (2006-2009).
Graduate Aptitude Test in Engineering (GATE), India. (2004)
Junior Research fellowship from Department of Science and
Technology (DST), India (2004-2005).

Research Interest

Computational Biophysics, Molecular dynamics simulations,
ab-initio simulations, Systems Biology, Chemo/Bio -informatics,
Drug design.

Languages

Skills

English:- Excellent understanding, speaking and writing skills
Italian:- Very good understanding, speaking and writing skills
Hindi:- Mother tongue, German:- Basic speaking

Reviewer PLoS One, Bioinformatics, Current Bioinformatics,
Activity Journal of Biomolecular structure and dynamics (Taylor Francis),
Royal Society Chemistry Journals, Current Drug Targets,
Materials Chemistry and Physics (Elsevier)

Membership Società Italiana di Biochimica e Biologia Molecolare (2012-2013)
American Biophysical Society (2008-2010)

Supervision of Students

1. Harapriya Charkravarthy (Visiting PhD student from Birla Institute of Technology Mesra, India, 01/2014 – 09/2014)
2. Paola Melis (Post Graduate Student at CRS4, Pula, Italy 06/2012 – 12/2012)
3. Vito Genna (Graduate student at CRS4, Pula, Italy 04/2012 – 10/2012)

Amit Kumar

PUBLICATIONS in peer reviewed Journals:

(* as corresponding author)

1. Ambati A, Poiret T, Svahn BM, Valentini D, Khademi M, Kockum I, Lima I, Arnheim-Dahlström L, Lamb F, Meng Q, **KUMAR A.**, Rane L, Olsson T, Maeurer M (2015). *Increased β -hemolytic Group A Streptococcal M6 serotype and streptodornase B-specific cellular immune responses in Swedish narcolepsy cases.* **J. Intern. Med.** doi:10.1111/joim.12355.
2. **KUMAR A.***, Sechi LA, Caboni P, Marrosu MG, Atzori L, Pieroni E (2015). *Dynamical Insights into differential characteristics of Mycobacterium avium subsp. paratuberculosis peptide binding to HLA-DRB1 proteins associated to Multiple Sclerosis.* **New. J. Chem.** doi:10.1039/C4NJ01903B.
3. Bal NC, Jena N, Chi M, Charkravarty H, **KUMAR A.**, Balaraju T,..., Sharon A, Periaswamy M (2015). *The C-terminal calcium-sensitive disordered motifs regulate isoform-specific polymerization characteristics of calsequestrin.* **Biopolymers** accepted article (doi:10.1002/bip.22534).
4. Caboni P, Liori B, **KUMAR A.**, Santoru ML, Asthana S, Pieroni E, Fais A, Era B, Cacace E, Ruggiero V, Atzori L (2014). *Metabolomics analysis and modeling suggest a lysophosphocholines-PAF Receptor interaction in fibromyalgia.* **PLoS One**, doi:10.1371/journal.pone.0107626
5. **KUMAR A.***, Melis P, Genna V, Cocco E, Marrosu MG, Pieroni E (2014). *Antigenic Peptide Molecular Recognition by DRB1 - DQB1 Haplotype modulates Multiple Sclerosis Susceptibility.* **Mol. Biosyst.** 10 2043-2054 (accepted with COVER ART).
6. **KUMAR A.**, Chakravarty H, Bal NC, Balaraju T, Jena N, Misra G, Bal C, Pieroni E, Periasamy M, Sharon A (2013). *Identification of calcium binding sites on calsequestrin 1 and their implications for polymerization.* **Mol. Biosyst.** 9 1949-1957.
7. Pieroni E, **KUMAR A.**, Pisu M, Genna V, Concas A, Cao G. (2013). *Combination of classical and molecular modeling approaches to investigate the effect of antipsychotic drugs on cell proliferation kinetics.* **Chem. Eng. Trans.** 32 787-792 doi: 10.3303/CET1332132.
8. **KUMAR A.***, Cocco E, Atzori L, Marrosu MG, Pieroni E. (2013). *Structural and Dynamical Insights on HLA-DR2 Complexes That Confer Susceptibility*

- to Multiple Sclerosis in Sardinia: A Molecular Dynamics Simulation Study. *PLoS One*, doi: 10.1371/journal.pone.0059711
9. Cocco E, Murru R, Costa G, **KUMAR A.**, Pieroni E, Cristina Melis, Luigi Barberini L, Sardu C, Marrosu MG. (2013). *Interaction between HLA-DRB1-DQB1 Haplotypes in Sardinian Multiple Sclerosis Population. PLoS One*, doi:10.1371/journal.pone.0059790
 10. Tuniki B, **KUMAR A.**, Bal C, Chattopadhyay D, Jena N, Bal NC, Sharon A (2013). *Aromatic interaction profile to understand the molecular basis of raltegravir resistance. Struct. Chem.* 24 1499-1512.
 11. **KUMAR A.**, Hajjar E, Ruggerone P, Ceccarelli M. (2010). *Molecular simulations reveal the mechanism and the determinants for ampicillin translocation through OmpF. J. Phys. Chem. B* 114 9608-9616.
 12. **KUMAR A.**, Hajjar E, Ruggerone P, Ceccarelli M. (2010). *Structural and Dynamical properties of Porins: Insights from Molecular Simulations. J. Phys. Cond. Matt.* 22 454125 doi: 10.1088/0953-8984/22/45/454125
 13. Hajjar E, Mahendran K, **KUMAR A.**, Bessonov A, Petrescu M, Weingart H, Ruggerone P, Winterhalter M, Ceccarelli M. (2010). *Bridging time and length scales: from macroscopic flux to molecular mechanism of antibiotics diffusion through porins. Biophys. J.* 98 569-575.
 14. Hajjar E, **KUMAR A.**, Ruggerone P, Ceccarelli M. (2010). *Investigating reaction pathways in rare events simulations of antibiotics diffusion through protein channels. J. Mol. Model.* 16 1701-1708.
 15. Hajjar E, Bessonov A, Molitor A, **KUMAR A.**, Mahendran K, Winterhalter M, Pages JM, Ruggerone P, Ceccarelli M. (2010). *Screening for antibiotics with enhanced permeation properties: proof of concept using molecular simulations. Biochemistry* 49 6928-6935.
 16. Mahendran K, Hajjar E, Mach T, Lovelle M, **KUMAR A.**, Sousa I, Spiga E, Weingart H, Gameiro P, Winterhalter M, Ceccarelli M (2010). *Molecular Basis of Enrofloxacin Translocation through OmpF, an Outer Membrane Channel of Escherichia coli - When Binding Does Not Imply Translocation. J. Phys. Chem. B* 114 5170-5179.
 17. F Collu, E Spiga, **KUMAR A.**, E Hajjar, AV Vargiu, M Ceccarelli, P Ruggerone (2009). *Drug Design: Insights from atomistic simulations. Nuovo Cimento Soc. Ital. Fis.* 32 67-71, doi: 10.1393/ncc/i2009-10365-0