

Curriculum Vitae

NAME **DR. CHINMOY SANKAR DEY**

CURRENT POSITION Professor
Kusuma School Of Biological Sciences,
Indian Institute of Technology-Delhi

POSTAL ADDRESS Kusuma School Of Biological Sciences,
Indian Institute of Technology-Delhi,
Hauz Khas, New Delhi 110016.

DATE OF BIRTH March 18, 1961, Kolkata, India

CITIZEN Indian

EDUCATION **Ph.D.** (Science) 1990*, Jadavpur University,
India, (*Thesis submitted in 1988)

RESEARCH EXPERIENCE

Indian Institute of Chemical Biology, Calcutta, India 1984 -1988
Ph.D. Fellow

California Institute of Technology, California, USA 1988 - 1991
Postdoctoral Research Fellow

Baylor College of Medicine, Texas, USA 1991 - 1992
Postdoctoral Research Associate

National Institute of Immunology, New Delhi, India 1992 - 1994
Pool Officer

National Institute of Pharmaceutical Education and Research, Punjab, India 1994 – 1999
Assistant Professor

National Institute of Pharmaceutical Education and Research, Punjab, India 1999 – 2002
Associate Professor

National Institute of Pharmaceutical Education and Research, Punjab, India Professor	2002 - 2010
National Institute of Pharmaceutical Education and Research, Punjab, India Head, Department of Biotechnology	2004 - 2010
Indian Institute of Technology-Delhi, New Delhi Professor	2010-till date

TEACHING EXPERIENCE

National Institute of Pharmaceutical Education and Research, Punjab, India Assistant Professor	1998 – 1999
National Institute of Pharmaceutical Education and Research, Punjab, India Associate Professor	1999 - 2002
National Institute of Pharmaceutical Education and Research, Punjab, India Professor, Department of Biotechnology	2002 - 2010
National Institute of Pharmaceutical Education and Research, Punjab, India Head, Department of Biotechnology	2004 - 2010
Indian Institute of Technology-Delhi, New Delhi Professor	2010-till date

COURSES TAUGHT

Cell Biology, Molecular Biology, Signal Transduction, Leishmania Biology, Graduate Research Seminar.

RESEARCH INTERESTS

- **Insulin resistant (Type 2) diabetes : *Molecular mechanism(s)/ Signal transduction.***
- **Leishmanial flagellar motility.**
- **Drug resistance in Leishmania: *Molecular mechanism(s)***

SCREENING MODEL DEVELOPED One

- **Skeletal cell model to screen anti-diabetic compounds. (Patent granted: US Patent 7,052,910, 2006)**

AWARDS, HONORS AND RECOGNITIONS:

- 1. SHANTI SWARUP BHATNAGAR AWARD in Medical Science, 2003** from Council of Scientific and Industrial Research, Govt. of India, New Delhi by the Prime Minister of India Dr. Manmohan Singh.
- 2. NATIONAL BIOSCIENCE AWARD 2003** from the Department of Biotechnology, Ministry of Science and Technology, Govt. of India, New Delhi by Dr. R.Chidambaram, Scientific Adviser, Prime Minister of India.
- 3. Organization of Pharmaceutical Producers of Indai-2005 scientist award in “Pharmaceutical Biotechnology”** by Hon'ble Minister, Mr. Kapil Sibal.
- 4. CDRI Award in “Excellence in Drug Research in Life Sciences, 2008”** from Central Drug Research Institute, Lucknow.
- 5. Fellow of the National Academy, (FNA), Indian National Science Academy (INSA), New Delhi., 2007** by Dr. R. Mashelkar, President, INSA and DG, CSIR.
- 6. Fellow of the National Academy of Sciences (FNASc), India, 2007.**
- 7. J.C.Bose Fellowship** from the Department of Science and Technology, Govt. of India; 2008
- 8. Visiting Scientist,** Diabetes Research Foundation, Madras.

9. Adjunct Faculty, Institute of Life Sciences, Hyderabad.

10. Citation of paper **Neuropharmacology** 2011, 60:910. (Impact factor: 4.7) by **Dr. James Watson (Nobel Laureate)** in his lecture on "60 years of discovery of DNA structure" at University of California, Los Angeles, during March, 2013 followed by publication in **The Lancet**, 2014, 383: 841.

11. Press Release in Nature: News India

12. Hottest 25 Papers: Science Direct: Molecular and Biochemical Parasitology, 141, 1, 2005

13. Cover Page: Molecular and Biochemical Parasitology, 141, 1, 2005

14. BMC Cell Biology, 2008, 9: 48: Downloaded 1408 pdf reprints within 3 months of publication

JOURNAL EDITOR:

- **Regional Associate Editor, Journal of Biopharmaceutics and Biotechnology, USA. (2006)**
- **Member, Editorial Board, Open Parasitology Journal, Bentham Publisher (2007-till date).**
- **Member, Editorial Board, Scientific Reports, Nature Publishing Group (2013-2014).**

JOURNAL REFEREE/REVIEWER:

Diabetes , USA (Impact factor 8)

FASEB Journal, USA (Impact factor 8.8)

Molecular Medicine (Impact factor 4.0)

FEBS Letters, EU (Impact factor 3.6)

Molecular Cell Biology, USA (Impact factor 9.8)

Antimicrobial Agents and Chemotherapy, USA (Impact factor 4.5)

British Journal of Pharmacology (Impact factor 4.5)

Comparative Biochemistry and Physiology, USA

Expert Opinion on Biological Therapy, UK
Indian Journal of Medical Research
Experimental Parasitology, UK

SOCIETY MEMBER:

Life Member, Society for the Biological Chemists, India.

CONSULTANCY (Pharmaceutical company):

- **Orchid Chemicals and Pharmaceutical Ltd., Chennai**
- Scientific Advisor, **Chembiotek Research International Pvt. Ltd., Kolkata, 2005-2006.**
- **DSM Anti Infectives, Punjab**

A COMPLETE LIST OF PUBLICATIONS

Reddy GS, Mukhopadhyay AG, **Dey CS**: The p38 MAP kinase inhibitor, PD 169316, inhibits flagellar motility in *Leishmania donovani*. **Biochem. Biophys. Res. Comm.** 2017, 493,1425.

Mukhopadhyay AG and **Dey CS**: Role of calmodulin and calcineurin in regulating flagellar motility and wave polarity in *Leishmania*. **Parasitol. Res.** 2017, 116, 3221.

Reddy GS, Mukhopadhyay AG and **Dey CS**: Characterization of ciliobrevin A mediated dynein ATPase inhibition on flagellar motility of *Leishmania donovani*. **Mol Biochem. Parasitol.** 2017, 214, 75.

Varshney P and **Dey CS**: Resveratrol regulates neuronal glucose uptake and insulin sensitivity via P21-activated kinase 2 (PAK2). **Biochem. Biophys. Res. Comm.** 2017, 485, 372.

Choudhary AK and **Dey CS**: Nuclear corepressor (NCoR) is required to maintain insulin sensitivity in C₂C₁₂ myotubes. **Cell Biol. Int.** 2016, 9999, 1.

Mukhopadhyay AG and **Dey CS**: Reactivation of flagellar motility in demembrated *Leishmania* reveals role of cAMP in flagellar wave reversal to ciliary waveform. **Sci. Rep.** 2016, 6:37308, DOI: 10.1038/srep37308.

Arora A and **Dey CS**: SIRT2 regulates insulin sensitivity in insulin-resistant neuronal cells. **Biochem. Biophys. Res. Comm.** 2016, 474, 747.

Varshney P and **Dey CS**: P21-activated kinase 2 (PAK2) regulates glucose uptake and insulin sensitivity in neuronal cells. **Mol. Cell. Endocrinol.** 2016, 429, 50.

Mukhopadhyay AG and **Dey CS**: Two-headed outer- and inner-arm dyneins of *Leishmania sp* bear conserved IQ-like motifs. **Biochem Biophys Rep.** 2015, 4, 283-290.

Arora A and **Dey CS**: SIRT2 negatively regulates insulin resistance in C2C12 skeletal muscle cells. **BBA - Molecular Basis of Disease** 2014:1842:1372.

Gupta A and **Dey CS**: PTEN, a widely known negative regulator of insulin/PI3K signaling, positively regulates neuronal insulin resistance. **Mol. Biol. Cell** 2012 23(19):3882-98.

Gupta A, Bisht B and **Dey CS**: Focal adhesion kinase negatively regulates neuronal insulin resistance. **Biochim Biophys Acta.-Molecular Basis of Disease.**2012:1822:1030.

Patel MI, Gupta A, **Dey CS**: Potentiation of neuronal insulin signaling and glucose uptake by Resveratrol: an involvement of AMPK. **Pharm. Rep.** 2011:63:1162.

Shah AK, Gupta A and **Dey CS**: AICAR induced AMPK activation potentiates neuronal insulin signaling and glucose uptake. **Arch. Biochem. Biophys.** 2011, 509: 142.

Gupta, A; Bisht, B and **Dey CS**: Peripheral insulin-sensitizer drug Metformin ameliorates neuronal insulin resistance and Alzheimer's-like changes **Neuropharmacology** 2011, 60:910.

Kaur A, Singh R, **Dey CS**, Sharma, SS, Bhutani, KK, Singh, IP: Antileishmanial phenyl propanoids from *Alpinia galangal* (Linn.) Willd. **Ind. J. Exp. Biol.** **2010** 48:314.

Sharma S, Singh GM, Chavan HD and **Dey CS**: Proteomic analysis of wild type and arsenite resistant *Leishmania donovani*. **Exptl. Parasitol.** **2009**, 123: 369.

Gupta A and Dey CS: PTEN and SHIP2 regulates PI3K/ Akt pathway through Focal adhesion kinase. **Mol. Cell. Endocrinol.** **2009**, 309:55.

Singh GM, Thakur M, Chakraborti PK and **Dey CS**: Evidence for the presence of R250G mutation at the ATPase domain of Topoisomerase II in an arsenite-resistant *L. donovani* that exhibits differential drug inhibition profile. **Int. J. Antimicrob. Agents** **2009**, **33**: 80.

Bisht B and **Dey CS**: Focal Adhesion Kinase contributes to insulin-induced actin reorganization into a mesh harboring Glucose transporter-4 in insulin resistant skeletal muscle cells. **BMC Cell Biology** **2008**, **9**: 48.

Bisht B, Srinivasan K and **Dey CS**. *In vivo* inhibition of Focal Adhesion Kinase causes insulin resistance. **J. Physiology**, **2008**, **586/16**: 3825.

Singh GM , Chavan HD and **Dey CS**: Proteomic analysis of miltefosine resistant *Leishmania* reveals the possible involvement of eukaryotic initiation factor 4A, eIF4A. **Int. J. Antimicrob. Agents** **2008**, **31**: 581.

Badiwala, HS, Singh G, Singh, R, **Dey CS**, Sharma, SS, Bhutani, KK and Singh IP: Antileishmanial amides and lignans from *Piper cubeba* and *Piper retrofractum*. **J. Nat. Med.** **2007**, **61**: 418.

Singh, G, and **Dey CS**. Induction of apoptosis-like cell death by pentamidine and doxorubicin through differential inhibition of topoisomerase II in arsenite-resistant *L. donovani*. **Acta Tropica**, **2007**, **103**: 172.

Chavan, HD, Singh, G and **Dey CS**. Confocal microscopic investigation of tubulin distribution and effect of paclitaxel on post-translationally modified tubulins in sodium arsenite resistant *Leishmania donovani*. **Exptl. Parasitol.** **2007**, **116** ; 320.

Bisht, B, Goel, HL and **Dey, CS**. Focal Adhesion Kinase regulates insulin resistance in skeletal muscle. **Diabetologia**, 2007, 50:1058.

Verma, NK, Singh, G and **Dey, CS**. Miltefosine induces apoptosis in arsenite-resistant *Leishmania donovani* promastigotes through mitochondrial dysfunction. **Exptl. Parasitol.**, 2006, 116: 1

Singh, J, Verma, NK, Kansagra Sejal M, Kate, B and **Dey, CS**. Altered PPAR γ expression inhibits myogenic differentiation in C2C12 skeletal muscle cells. **Mol. Cell. Biochem.** 2007, 294: 163.

Panchagnula, R, Bindra, P, Pillai, O, Kumar, N and **Dey, CS**. Stability of insulin under iontophoretic conditions. **Pharmazie** 2006, 61: 1014.

Verma, NK and **Dey, CS**. Anti-leishmanial drug miltefosine causes insulin resistance in skeletal muscle cells *in vitro*. **Diabetologia**, 2006, 49:1656.

Jayanarayan, KG and **Dey, CS**. Altered tubulin dynamics, localization and post-translational modifications in sodium arsenite resistant *Leishmania donovani* in response to paclitaxel, trifluralin treatment and a combination of both and induction of apoptosis-like cell death. **Parasitology**, 2005, 131: 215.

Khurana, A and **Dey, CS**. Involvement of c-jun n-terminal kinase activities in skeletal muscle differentiation. **J. Muscle Res. Cell Motil.**, 2004, 25: 645.

Singh, G, Jayanarayan, KG and **Dey, CS**. Novobiocin induces apoptosis-like cell death in topoisomerase II over-expressing arsenite resistant *Leishmania donovani*. **Mol. Biochem. Parasitol.**, 2005, 141: 57.

Verma, NK, Singh, J and **Dey, CS**. PPAR- γ expression modulates insulin sensitivity in C2C12 skeletal muscle cells. **Brit. J. Pharmacol.**, 2004, 143: 1006.

Verma, NK and **Dey, CS**. Possible mechanism of miltefosine mediated death of *Leishmania donovani*. **Antimicrob. Agents Chemother.**, 2004, 48: 3010.

Jayanarayan, KG and **Dey, CS**. Altered expression, polymerization and cellular distribution of α/β -tubulins and apoptotic-like cell death in arsenite

resistant *Leishmania donovani* promastigotes. **Int. J. Parasitol.**, **2004**, **34**: 915.

Miranda, ER and **Dey, CS**. Effect of chromium and zinc on insulin signaling in skeletal muscle. **Biol. Trace Elemt. Res.**, **2004**, **101**,19.

Kumar, N, Kaul, CL, Ishrath, A and **Dey, CS**. Combination of metformin and thiazolidindiones restore insulin signalling in insulin-resistant cultured myotubes. **Life Sci.**, **2004**, **74**: 1877.

Kumar, N and **Dey, CS**. Restoration of impaired p38 activation by insulin in insulin resistant skeletal muscle cells treated with thiazolidinediones. **Mol. Cell. Biochem.**, **2004**, **260**: 55.

Pillai, O, Kumar, N, **Dey, CS**, Sivaprasad, SN and Panchagnula, R. Transdermal iontophoresis of insulin: III. Influence of electronic parameters. **Meth. Find. Exptl. Clin. Pharmacol.**, **2004**, **26**: 399.

Pillai, O, Kumar, N, **Dey, CS**, Borkute, S, Nagalingam, S & Panchagnula, R: Transdermal iontophoresis of insulin. Part 1: A Study on the issues associated with the use of platinum electrodes on rat skin. **J. Pharm. Pharmacol.**, **2003**, **55**: 1505.

Kumar, N and **Dey, CS**. Development of insulin resistance and reversal by thiazolidinediones in C2C12 skeletal muscle cells. **Biochem. Pharmacol.**, **2003**, **65**: 249.

Khurana, AK and **Dey, CS**. p38 MAPK interacts with actin and modulates filament assembly during skeletal muscle differentiation. **Differentiation**, **2003**, **71**: 42.

Jayanarayan KG and **Dey, CS**. Overexpression and increased DNA topoisomerase like enzyme activity in arsenite resistant *Leishmania donovani*. **Microbiol. Res.**, **2003**, **158**: 55.

Gargi, A, Kumar, N and **Dey, CS**. Differential regulation of MAP kinase isoforms by H₂O₂ in neuronal cells. **Neuro. Res. Comm.**, **2003**, **33**: 17.

Kumar, N and **Dey, CS**. Metformin enhances insulin signaling in insulin – dependent and –independent pathways in insulin resistant muscle cells. **Brit. J. Pharmacol.**, 2002, **137**: 329.

Kumar, N and **Dey, CS**. Gliclazide increases IR tyrosine phosphorylation but not p38 activation in insulin-resistant myotubes. **J. Exptl. Biol.**, 2002, **205**: 3739.

Goel, HL and **Dey, CS**. Insulin stimulates spreading of skeletal muscle cells involving the activation of focal adhesion kinase, phosphatidyl inositol 3-kinase and extracellular signal regulated kinase. **J. Cell. Physiol.**, 2002, **193**: 187.

Goel, HL and **Dey, CS**. Role of protein kinase C during insulin mediated skeletal muscle cell spreading. **J. Muscle Res. Cell Motil.**, 2002, **23**: 269.

Goel, HL and **Dey, CS**. PKC regulated myogenesis is associated with activation of FAK, Cas, paxillin and formation of Cas-Crk complex leading to JNK activation. **Differentiation**, 2002, **70**: 257.

Goel, HL and **Dey, CS**. Focal adhesion kinase tyrosine phosphorylation is associated with myogenesis and modulated by insulin. **Cell Prolif.**, 2002, **35**: 13.

Khurana, AK and **Dey, CS**. Involvement of Elk-1 transcription factor in L6E9 skeletal muscle differentiation. **FEBS Lett.**, 2002, **527**:119.

Khurana, AK and **Dey, CS**. Subtype specific roles of mitogen activated protein kinases in L6E9 rat skeletal muscle cell differentiation. **Mol. Cell. Biochem.**, 2002, **238**: 27.

Ishrath, A, Kumar, N and **Dey, CS**. Differential activation of ERK and JNK by arsenite in mouse muscle cells. **Comp. Biochem. Physiol.**, 2002, **132**: 375.

Jayanarayan, KG and **Dey, CS** : Resistance to arsenite modulates expression of β - and γ -tubulin and sensitivity to paclitaxel during differentiation of *Leishmania donovani*. **Parasitol. Res.**, 2002, **88**: 754.

Goel, HL and **Dey, CS**. Insulin mediated tyrosine phosphorylation of myosin heavy chain and concomitant enhanced association of C- terminal src kinase during skeletal muscle differentiation. **Cell Biol. Int.**, **2002**, **26**: 557.

Nemmani, KVS, Jena, GB, **Dey, CS**, Kaul, CL and RamaRao, P. Cell proliferation and natural killer cell activity by polyherbal formulation, Immu-21 in mice. **Ind. J. Exptl. Biol.**, **2002**, **40**: 282.

Singh DD, **Dey CS** and Bhutani, KK. Down regulation of p34cdc2 by an aqueous fraction of *Withania somnifera*. **Phytomed.**, **2001**, **8**: 492.

Kaur, J and **Dey, CS**. Putative P-glycoprotein expression in arsenite resistant *Leishmania donovani* down-regulated by verapamil. **Biochem. Biophys. Res. Commun.**, **2000**, **271**: 615.

Prasad, V, Kumar, SS and **Dey, CS**. Resistance to arsenite modulates levels of α -tubulin and sensitivity to Paclitaxel in *Leishmania donovani*. **Parasitol. Res.**, **2000**, **86**, 838.

Prasad, V and **Dey, CS**. Tubulin is hyperphosphorylated on serine and tyrosine residues in arsenite resistant *Leishmania donovani*. **Parasitol. Res.**, **2000**, **86**: 876.

Prasad, V, Kaur, J and **Dey, CS**. Arsenite resistant *Leishmania donovani* promastigotes express an enhanced membrane P-type ATPase activity sensitive to verapamil treatment. **Parasitol. Res.**, **2000**, **86**: 661.

Gopalakrishnan, A, **Dey, CS**, Totey, SM, Pawshe, CH, Salunke, D, and Shaha, C. A testicular protein important for fertility has glutathione-S-transferase activity and is localised extracellularly in the seminiferous tubule. **J. Biol. Chem.**, **1995**, **270**: 15675.

Dey, CS, Deitiker, PR and Epstein, HF. Assembly-dependent phosphorylation of myosin and paramyosin of native thick filaments in *Caenorhabditis elegans*. **Biochem. Biophys. Res. Commun.**, **1992**, **186**: 1528.

Dey, CS, and Brokaw, CJ. Activation of Ciona sperm motility: Phosphorylation of dynein polypeptides and effects of inhibition of tyrosine kinase activity. **J. Cell Sci.**, **1991**, **100**: 815.

Haldar, S, **Dey, CS**, and Majumder, GC. A ficoll gradient method for isolation of immature spermatozoa of high purity and intactness from goat caput epididymis. **Arch. Androl.**, **1990**, **24**: 125.

Dey, CS, and Majumder, GC. Maturation specific type II cAMP-dependent protein kinase in goat sperm plasma membrane. **Biochem. Int.**, **1990**, **21**: 656.

Dey, CS, and Majumder, GC. Type I and Type II cAMP-dependent protein kinase in goat epididymal spermatozoa and their enriched activities in forward motile spermatozoa. **Biochem. Cell Biol.** **1990**, **68**: 459.

Dey, CS, and Majumder, GC. A simple quantitative method of estimation of cell intactness based on ethidium bromide fluorescence. **Biochem. Int.**, **1988**, **17**: **2**, 367.

Majumder, GC, Haldar, S, **Dey, CS**, Barua, M and N. Roy. Occurrence of several ecto-proteins on goat spermatozoal surface that may regulate flagellar motility. **Ind. J. Biochem. Biophys.**, **1988**, **25**: 215.

Dey, CS, and Majumder, GC. Phosphatidyl inositol inhibition of a sperm cyclic AMP-independent protein kinase. **Biochem. Biophys. Res. Commun.**, **1987**, **146**: 422.

Dey, CS, and Majumder, GC. Ecto-cyclic AMP receptor in goat epididymal spermatozoa and its change in activity during forward motility. **J. Cell. Biochem.**, **1987**, **35**: 259.

Haldar, S, **Dey, CS**, and Majumder, GC. An ecto-cyclic AMP-independent protein kinase on goat spermatozoa and its change of activity during forward motility. **Biochem. Int.**, **1986**, **13**: 809.

Reviews:

- 1) Verma NK and **Dey, CS** : RNAi-mediated gene silencing: mechanisms and its therapeutic applications. **J. Clin. Pharm. Therap.**, **2004**, **29**: 395.
- 2) Verma, MVS, Ashokrai, Y, **Dey, CS** and Panchagnula, R: P-

- glycoprotein inhibitors and their screening: a perspective from bioavailability enhancement. **Pharm. Res.**, **2003**, **48**: 347.
- 3) Jayanarayan, KG and **Dey, CS**. Microtubules: Dynamics, drug interaction and drug resistance in Leishmania. **J. Clin. Pharm. Therap.**, **2002**, **27**: 313.
 - 4) Kaul, CL and **Dey, CS**: Future drug discovery-new techniques, new targets. World Market Research Centre; Business Briefing : **Future Drug Discovery**, **2002**, 44.
 - 5) Panchagnula, R and **Dey, CS** : Monoclonal antibodies in drug targeting. **J. Clin. Pharm. Therap.**, **1997**, **22**: 7.
 - 6) Majumder, GC, **Dey, CS**, Haldar, S and Barua, M : Biochemical parameters of initiation and regulation of sperm motility. **Arch. Androl.**, **1990**, **24**: 287.

Patents:

- 1) Kumar, N and **Dey, CS**. Skeletal cell model to screen anti-diabetic compounds. Accepted for grant of patent issue by the **USPTO (2006)** App. No. 09/984018(US), **Patent No. 7052910 B2(US)/2006**.

Book chapters:

- 1) **C. S. Dey** and N. Kumar: Development of insulin resistance in cultured skeletal muscle cells and reversal by thiazolidinedione. **Non-alcoholic fatty liver disease (NAFLD)** 10th Annual Symposium, Ranbaxy Science Foundation. **2004**
- 2) G. Singh, K.G. Jayanarayan and **C. S. Dey**: Arsenite Resistance in Leishmania and Possible Drug Targets. Online at Eureka.com, December, 2006 and in the book “**Drug Targets in Kinetoplastid Parasites**” in the Advances in Experimental Medicine and Biology, Edt: Dr. H.K.Majumder, Landes Bioscience, Vol. 625, page 1, **2007**.

- 3) G.C. Majumder, S. Saha, K. Das, D. Nath, A. Maiti, S. Dey, D. Roy, **C. S. Dey**, S. Mitra, A. Rana, J. Chakrabarty, S. Das, A. Bhoumik, S. Banerjee, M. Mandal, B. S. Jaiswal, P. Ghosh, A. Das, D. Bhattacharyya and S. R. Dungdung: Role of Sperm Surface Molecules in Motility Regulation. Mammalian Endocrinology and Male Reproductive Biology, Chapter 8, Edt. S. K. Singh. CRC Press, 197-243.2015, ebook isbn: 978-1-4987-2736-5.