

Curriculum Vitae

Name: Gautam Basu
Gender / Nationality: Male / Indian
Date of Birth: July 18, 1961
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Overview:

Gautam Basu is a Biophysicist and a former Professor and Chairman of the Biophysics Department at Bose Institute, Kolkata, where he served as the Dean (Students' Affairs) and the Professor-in-charge of the J C Bose Museum. He was educated at Presidency College (Kolkata), IIT Kanpur and Cornell University (USA). Beyond scientific research, he is actively involved in science communication and has interest in History of Science. Currently he is an Adjunct Professor at IISER Kolkata and a Visiting Professor at NIPER Kolkata.

Scientific contribution (Structural/Computational Biology and Biophysical Chemistry):

Gautam Basu has made fundamental contributions, both theoretical and experimental, in Computational and Structural Biology. He is internationally known for work in peptide science — for developing models for α -helix/ 3_{10} -helix transition, designing peptides with unique structural and functional properties containing unnatural amino acids like Aib, establishing unique features of 3_{10} -helices in proteins and rules for helix nucleation, identifying CH- π interaction-stabilized structural motifs containing *cis*-peptide, establishing a new *cis*Pro-containing helix N-Cap motif and discovering the first united-residue in proteins. Dr. Basu has also developed models for protein electron transfer, protein dynamics and identified fundamental aspects of electrostatic interactions that drive protein-protein and protein-ligand interactions. His work generated insights about drug binding sites on tubulin and small molecules that interrupt PC4-p53 interaction. His work on bacterial GlxRS/tRNA^{Glx} interaction established: (i) an important role of the anticodon-binding domain of GluRS, (ii) Zn-binding domain of GluRS, (iii) signatures of tRNA^{Glx}-specificity on GluRS, and, (iv) insights on the evolution of bacterial GlxRS His group has also extensively worked on characterizing DNA-small molecule interactions including the identification of novel DNA superstructures induced by intercalators that lead to histone eviction from chromatin, and recently his group was the first to report *cis-trans* isomerization of a ligand, induced by the DNA minor groove.

Education:

1992 Ph.D. (Chemistry), Cornell University, USA
1988 M.S. (Chemistry), Cornell University, USA
1986 M.Sc. (Chemistry), IIT Kanpur, India
1984 B.Sc. (Chemistry Hons.), Presidency College, Kolkata

Professional Experience:

1993-1995 Postdoctoral Fellow, Kyoto University
1995-2021 Lecturer, Senior Lecturer, Reader, Professor, Dept. of Biophysics, Bose Institute
2022-present Adjunct Professor, Indian Institute of Science Education and Research, Kolkata

Visiting positions:

1998 (Oct-Dec) Visiting Scientist, Memorial Sloan Kettering Cancer Center, USA
2000 (May-Aug) Visiting Scientist, Temple University, USA
2002 – 2004 Visiting Associate Professor, NAIST, Japan
2007 (May-June) Visiting Scientist, Montana State University, USA
2006-2007 Visiting Associate Professor, IISER, Kolkata
2014 (16.06-16.08) Visiting Professor, Indiana University, USA
2017 (01.06-30.06) Visiting Professor, IPR, Osaka University, Japan
2018 (07.05-06.06) Visiting Professor, IPR, Osaka University, Japan

Awards and Recognitions:

1979 National Science Talent (NCERT)
1993 Human Frontier Science Program Organization Fellow (Postdoctoral Fellow)
1995 Japanese Society for Promotion of Science Fellow (Postdoctoral Fellow)
2024 Elected Fellow, West Bengal Academy of Science & Technology (WAST)

Editorial Assignments:

Editorial Board Member, Biophysical Reviews (Springer)
Editorial Board Member, Biophysical and Physicobiology (Japanese Biophysical Society)

Advisory Roles:

2018-2023: Member of the Academic and Research Programme Advisory Committee of S. N. Bose National Center for Basic Sciences, Kolkata (an autonomous Institute under Department of Science and Technology, Govt. of India)

Scientific Societies

Vice-President, Indian Peptide Society

PhD Examiner

IISER Mohali, IIT Madras, IIT Bombay, IISc Bangalore, University of Calcutta, Viswabharati University

Recent Invited Talks (2023)

>>*Can Science progress without Art?*, Indian Association for the Cultivation of Science, Kolkata (28.02.23)
>>*Jagadish Chandra Bose: A Pioneer in Science and Photosynthesis Research*, J.C. Bose Memorial Lecture hosted by the Indian Photobiology Society (03.03.23).
>>*Molecular Mechanisms of Bacterial Persistence by E. coli toxin HipA*, at UGC-SAP (DRS-II)-Sponsored National Symposium on Stress Biology: Recent Advances in Biochemical & Biophysical Research held at Kalyani University (23.03.23)
>>*Parallel lives of two founding fathers of Indian Science: P C Ray and J C Bose*, Acharya P C Ray Birthday Celebration, Assam University, Silchar (02.08.23)
>>*Jagadish Chandra Bose: The road not taken*, Foundation Day Lecture, Dhruba Chand Halder College, West Bengal (23.08.23)
>>*Minor conformation-triggered intermolecular interactions*, MBU, IISc, Bangalore (28.08.23)
>>*"AI: BOON or CURSE"* Panel Discussion, Institute of Engineering and Management, Kolkata (27.09.23)

Peer-reviewed Publications (Google scholar indices: citations: 2506; h-index: 30; i10-index: 49)

1. Dasgupta, S., Dev, A., Chongdar, N., Basak, P., Ghosh Dastidar, S., Basu, G. (2023) Signatures of tRNA^{Glx}-specificity in proteobacterial glutamyl-tRNA synthetases. *Proteins: Structure, Function and Bioinformatics* (doi: 10.1002/prot.26634)
2. Kar, S., Maji, N., Sen, K., Roy, S., Roy, A., Ghosh Dastidar, S., Nath, S., Basu, G., Basu, M. (2023) Reprogramming of glucose metabolism via PFKFB4 is critical in FGF16-driven invasion of breast cancer cells. *Biosci. Rep.* **43(8):BSR20230677**.
3. Majhi, B., Ganguly, S., Parwez, A., Palit, S., Saha, R., Basu, G., Dutta, S. (2023) Sequence-specific dual DNA binding modes and cytotoxicities of N-6 functionalized norcryptotackeine alkaloids. *J. Nat. Prod.* **86, 1667–1676**.
4. Pandey, B., Sinha, K., Dev, A., Ganguly, H., Polley, S., Chakrabarty, S., Basu, G. (2023) Phosphorylation-Competent Metastable State of Escherichia coli Toxin HipA. *Biochemistry* **62, 989–999**.
5. Pandey, B., Dev, A., Chakravorty, D., Polley, S., Roy, S., Basu, G. (2021) Insights on the disruption of the complex between human positive coactivator 4 and p53 by small molecules. *Biochem. Biophys. Res. Comm.* **578, 15-20**.
6. Ganguly, S., Murugan, A., Ghosh, D., Narayanaswamy, N., Govindaraju, T., Basu, G. (2021) DNA minor groove-induced cis-trans isomerization of a NIR fluorescent probe. *Biochemistry* **60, 26, 2084–2097**.
7. Basu, C., Ganguly, H. K., Basu, G. (2021) Accommodation of Gly-cisPro in a designed β -hairpin. *Chem. Commun.* **57, 7172-7175**.
8. Upadhyaya, G., Das, A., Basu, C., Agarwal, T., Basak, C., Chakraborty, C., Halder, T., Basu, G., Ray, S. (2021) Multiple copies of a novel amphipathic α -helix forming segment in *Physcomitrella patens* dehydrin play a key role in abiotic stress mitigation. *J. Biol. Chem.* **296, 100596**.
9. Patra, D., Banerjee, S., Mandi, C. S., Haseena, K. S., Basu, G., Dutta, S. (2021) A pyrimido-quinoxaline fused heterocycle lights up transfer RNA upon binding at the Mg²⁺ binding site. *ChemBioChem*, **22, 359-363**.
10. Ganguly, S., Ghosh, D., Narayanaswamy, N., Govindaraju, T., Basu, G. (2020) Dual DNA binding mode of a turn-on red fluorescent probe thiazole coumarin. *Plos One*, **15 (9), e0239145**
11. Ganguly, H.K., Basu, G. (2020) Conformational landscape of substituted prolines. *Biophys. Rev.* **12: 25-39**.
12. Chattopadhyaya, S., Chakravorty, D., Basu, G. (2019) A collective motion description of tubulin β T7 loop dynamics. *Biophys Physicobiol.* **16: 264–273**.
13. Chandra, N., Biswas, S., Rout, J., Basu, G. Tripathy, U. (2019) Stability of β -turn in LaR2C-N7 peptide for its translation-inhibitory activity against Hepatitis C viral infection: A molecular dynamics study. *Spectrochim. Acta A Mol. Biomol. Spectrosc.* **211:26-33**.
14. Bera, S., Dhar, J., Dasgupta, R., Basu, G., Chakraborti, S., Chakrabarti, P. (2018) Molecular features of interaction involving hen egg white lysozyme immobilized on graphene oxide and the effect on activity. *Int. J. Biol. Macromol.* **120B:2390-2398**.
15. Mahata, T., Chakraborty, J., Kanungo, A., Patra, D., Basu, G., Dutta, S. (2018) Intercalator-Induced DNA Superstructure Formation: Doxorubicin and a Synthetic Quinoxaline Derivative. *Biochemistry* **57: 5557-5563**.
16. Dasgupta, R., Ganguly, H. K., Modugula, E. K., Basu, G. (2017) Type VIa beta-turn-fused helix N-termini: A novel helix N-cap motif containing cis proline. *Biopolymers (Peptide Science)* **108:e22919. (DOI: 10.1002/bip.22919)**
17. Mahata, T., Kanungo, A., Ganguly, S., Modugula, E. K., Choudhury, S., Pal, S. K., Basu, G., Dutta, S. (2016) The Benzyl Moiety in a Quinoxaline-Based Scaffold Acts as a DNA Intercalation Switch. *Angew. Chem. Int. Ed. Engl.* **55:7733-7736**.
18. Chattopadhyay, S., Haresh, A., Basu, G. (2016) Effect of introducing Aib in a designed helical inhibitor of HDM2-p53 interaction: A molecular dynamics study. *Biopolymers (Peptide Science)* **106:51-61**.
19. Jordan, P. C., Patterson, D. P., Saboda, K. N., Edwards, E. J., Mietten-Granger, H., Basu, G., Thielges, M. C., Douglas, T. (2016) Self-Assembling Biomolecular Catalysts for Hydrogen Production. *Nature Chemistry* **8:179-185**.
20. Schwarz, B., Madden, P., Avera, J., Gordon, B., Larson, K., Mietten, H., Uchida, M., LaFrance, B., Basu, G., Rynda-Apple, A., Douglas, T. (2015) Symmetry Controlled, Genetic Presentation of Bio-Active Proteins on the P22 Virus-like Particle using Bacteriophage L Decoration Protein. *ACS Nano* **9:9134-9147**.
21. Das, M., Basu, G. (2015) Protein-protein association rates captured in a single geometric parameter. *Proteins: Structure, Function and Bioinformatics* **83:1557-1562**.
22. Chongdar, N., Dasgupta, S., Dutta, A. B., Basu, G. (2015) Dispensability of zinc and the putative zinc-binding domain in bacterial glutamyl-tRNA synthetase. *Biosci. Rep.* **35:e00184**.
23. Chongdar, N., Dasgupta, S., Dutta, A. B., Basu, G. (2014) Preliminary X-ray crystallographic analysis of an engineered glutamyl-tRNA synthetase from Escherichia coli *Acta Crystallogr. F Struct. Biol. Commun.* **70:922-927**.

24. Dasgupta, S., Basu, G. (2014) Evolutionary insights about bacterial GlxRS from whole genome analyses: Is GluRS2 a chimera? *BMC Evol. Biol.* **14**:26.
25. Kumar, A., Manna, A., Ray, U., Mullick, R., Basu, G., Das, S., Roy, S. (2014) Specific Sequence of a Beta-turn in Human La Protein May Contribute to Species Specificity of Hepatitis C Virus *J. Virol.* **88**:4319-4327.
26. Goswami, N., Bakshi, A., Giri, A., Xavier, P.L., Basu, G., Pradeep, T., Pal, S.K. (2014) Luminescent iron clusters in solution. *Nanoscale* **6**:1848-1854.
27. Chakraborti, S., Dhar, G., Dwivedi, V., Das, A., Poddar, A., Chakrabarti, G., Basu, G., Chakrabarti, P., Surolia, A., Bhattacharyya, B. (2013) Stable and potent analogs derived from the modification of the dicarbonyl moiety of curcumin. *Biochemistry* **52**:7449-7460.
28. Ganguly, H. K., Kaur, H., Basu, G. (2013) Local control of cis-peptidyl-prolyl bonds mediated by CH- π interactions: The Xaa-Pro-Tyr motif. *Biochemistry* **52**:6348-6357.
29. Das, S., Banerjee, B., Hossain, M., Thangamuniyandi, M., Dasgupta, S., Chongdar, N., Suresh Kumar, G., Basu, G. (2013) Characterization of DNA binding property of the tumor suppressor protein Integrase Interactor 1 (INI1/hSNF5). *Plos One* **8**:e66581.
30. Manna, A. K., Kumar A., Ray, U., Das, S., Basu, G., Roy, S. (2013) A cyclic peptide mimic of an RNA recognition motif of human La protein is a potent inhibitor of hepatitis C virus. *Antiviral Res.* **97**:223-226.
31. O'Neil, A., Prevelige, P. E., Basu, G., Douglas, T. (2012) Co-Confinement of Fluorescent Proteins: Spatially Enforced Communication of GFP and mCherry Encapsulated Within the P22 Capsid. *Biomacromolecules* **13**:3902-3907.
32. Das, M., Basu, G. (2012) Glycine Rescue of β -Sheets from cis-Proline. *J. Am. Chem. Soc.* **134**:13536-13539.
33. Das, L., Bhattacharya, B., Basu, G. (2012) Rationalization of paclitaxel insensitivity of yeast β -tubulin and human β III-tubulin isotype using principal component analysis. *BMC Research Notes* **5**:395.
34. Saha, R., Dasgupta, S., Banerjee, R., Mitra-Bhattacharyya, A., Soll, D., Basu, G., Roy, S. (2012) A functional loop spanning distant domains of glutamyl-tRNA synthetase also stabilizes a molten globule state. *Biochemistry* **51**:4429-4437.
35. Dasgupta, S., Manna, D., Basu, G. (2012) Structural and functional consequences of mutating a proteobacteria-specific surface residue in the catalytic domain of E. coli GluRS. *FEBS Lett.* **586**:1724-1730.
36. Ganguly, H. K., Majumder, B., Chattopadhyay, S., Chakrabarti, P., Basu, G. (2012) Direct Evidence for CH- π Interaction Mediated Stabilization of Pro-cisPro Bond in Peptides with Pro-Pro-Aromatic motifs. *J. Am. Chem. Soc.* **134**:4661-4669.
37. Banerjee, S., Bhowmik, D., Verma, P. K., Mitra, R. K., Sidhhanta, A., Basu, G., Pal, S. (2011) Ultrafast Spectroscopic Study on Caffeine Mediated Dissociation of Mutagenic Ethidium from Synthetic DNA and Various Cell Nuclei. *J. Phys. Chem. B* **115**:14776-83.
38. Banerjee, S., Verma, P. K., Mitra, R. K., Basu, G., Pal, S. K. (2011) Probing the Interior of Self-Assembled Caffeine Dimer at Various Temperatures. *J. Fluoresc.* **22**:753-69.
39. Chakraborti, S., Das, L., Kapoor, N., Das, A., Dwivedi, V., Poddar, A., Chakrabarti, G., Janik, M. E., Basu, G., Panda, D., Chakrabarti, P., Surolia, A., Bhattacharyya, B. (2011) Curcumin recognizes a unique binding site of tubulin. *J. Med. Chem.* **54**:6183-6196.
40. Cheema, J. and Basu G. (2011) MAPS: An interactive web server for membrane annotation of transmembrane proteins. *Ind. J. Biochem. Biophys.* **48**:106-110.
41. Pradhan, S. K., Dasgupta, D., Basu G. (2011) Human telomere d[(TTAGGG)₄] undergoes a conformational transition to the Na⁺-form upon binding with sanguinarine in presence of K⁺. *Biochem. Biophys. Res. Comm.* **404**:139-142.
42. Neogy, R. K., Nath, R., Basu, G., Raychaudhuri, A. K. (2010) Single step precursor free synthesis and characterisation of stable Au nanochains by laser ablation. arXiv:1010.1999v1 [cond-mat.mtrl-sci].
43. Dasgupta, S., Saha, R., Dey, C., Banerjee, R., Roy S, Basu G. (2009) The role of the catalytic domain of E. coli GluRS in tRNAGln discrimination. *FEBS Lett.* **583**:2114-2120.
44. Banerjee R, Chattopadhyay S, Basu G. (2009) Conformational preferences of a short Aib/Ala-based water-soluble peptide as a function of temperature, *Proteins* **76**:184-200.
45. Das M, Basu G. (2009) Coulomb energies of protein-protein complexes with monopole-free charge distributions. *J. Mol. Graph. Model.* **27**:846-51.
46. Saha R, Dasgupta S, Basu G, Roy S. (2009) A chimaeric glutamyl:glutamyl-tRNA synthetase: implications for evolution. *Biochem. J.* **417**:449-55.
47. Dasgupta, B, Chakrabarti, P, Basu, G. (2007) Enhanced stability of cis Pro-Pro peptide bond in Pro-Pro-Phe sequence motif. *FEBS Lett.* **581**:4529-32.
48. Banerjee M, Bhattacharyya, B., Basu, G. (2007) Differential colchicine-binding across eukaryotic families: the role of highly conserved Pro268 β and Ala248 β residues in animal tubulin. *FEBS Lett.* **581**:5019-23.
49. Saha. R. P., Basu, G., Chakrabarti P. (2006) Cloning, expression, purification, and characterization of Vibrio cholerae transcriptional activator. HlyU. *Protein Expr. Purif.* **48**:118-25.
50. Allen M, Bulte JW, Liepold L, Basu G, Zywicke HA, Frank JA, Young M, Douglas T. (2005) Paramagnetic viral nanoparticles as potential high-relaxivity magnetic resonance contrast agents. *Magn. Reson. Med.* **54**:807-812.

51. Gupta S, Banerjee M, Poddar A, Banerjee A, Basu G, Roy D, Bhattacharyya B. (2005) Biphasic kinetics of the colchicine-tubulin interaction: role of amino acids surrounding the a ring of bound colchicine molecule. *Biochemistry* **44**:10181-10188.
52. Basu, G., Sivanesan, D., Kawabata, T., Go, N. (2004) Electrostatic Potential of Nucleotide-free Protein is Sufficient for Discrimination Between Adenine and Guanine-specific Binding Sites. *J. Mol. Biol.* **342**:1053-1066.
53. Dasgupta, B., Pal, L., Basu, G. & Chakrabarti, P. (2004) Expanded turn conformations: Characterization and sequence-structure correspondence in α -turns with implications in helix folding. *Proteins* **55**:305-315.
54. Basu, G., Allen, M., Willits, D., Young, M. & Douglas, T. (2003) Metal Binding to Cowpea Mottle Virus Using Tb(III) Fluorescence. *J. Biol. Inorg. Chem.* **8**:721-725.
55. Pal, L., Chakrabarti, Basu, G. (2003) Sequence and Structural Patterns in Proteins from an Analysis of the Shortest Helices: Implications for helix nucleation. *J. Mol. Biol.* **326**:273-291.
56. Tanimoto, S., Basu, G., Kawabata, T., Go, N. (2003) On the Accuracy of Transmembrane Segment Prediction of Helical Integral Membrane Proteins. *Genome Informatics* **14**: 557-558.
57. Banerjee, R., Basu, G. (2002) A Short Aib/Ala-based Peptide-helix is as Stable as an Ala-based Peptide-Helix Double its Length. *ChemBioChem* **3**:1263-1266.
58. Banerjee, R., Basu, G. (2002) Direct evidence for alteration of unfolding profile of a helical peptide by far-ultraviolet circular dichroism aromatics side-chain contribution. *FEBS Lett.* **523**:152-156..
59. Banerjee, R., Basu, G., Chene, P., Roy, S. (2002) Aib-based Peptide Backbone as Scaffolds for Helical Peptide Mimics. *J. Pep. Res.* **60**:88-94.
60. Pal, L., Basu, G., Chakrabarti, P. (2002) Variants of 3_{10} -helices in Proteins. *Proteins* **48**, 571:579.
61. Kar, S., Sakaguchi, K., Shimohigashi, Y., Samaddar, S., Banerjee, R., Basu, G., Swaminathan, V., Kundu, T. K., Roy, S. (2002) Effect of Phosphorylation on the Structure and Fold of Transactivation domain of p53. *J. Biol. Chem.* **277**:15579-15585.
62. Sivanesan, D., Basu, G., Go, N. (2002) The Role of Electrostatics in Discrimination of Adenine and Guanine by Proteins. *Genome Informatics* **13**: 316-317.
63. Ghose, M., Mandal, S., Roy, D., R. K. Mandal, Basu, G. (2001) Dielectric Relaxation in a Single Tryptophan Protein. *FEBS Lett.* **509**:337-340.
64. Pal, D., Mahapatra, P., Manna, T., Chakrabarti, P., Bhattacharyya, B., Banerjee, A., Basu, G., Roy, S. (2001) Conformational properties of α -tubulin tail peptide: Implications for tail-body interaction. *Biochemistry* **40**:1512-15519.
65. Sengupta, J., Ray, P. K. & Basu, G. (2001) Solution structure of an immunoreactive peptide from Staphylococcal Protein A. *J. Biomol. Struct. Dyn.* **18**:773-881.
66. Pal, L. & Basu, G. (2001) Neural Network Prediction of 3_{10} -helices in proteins. *Ind. J. Biochem. Biophys.* **38**:107-114.
67. Kettani, A., Basu, G., Gorin, A., Majumdar, A., Skripkin, E. & Patel, D. J. (2000) A two-stranded template-based approach to G.(C-A) triad formation: designing novel structural elements into an existing DNA framework. *J. Mol. Biol.* **301**:129-146.
68. Pal, L. & Basu, G. (1999) Novel protein structural motifs containing two-turn and longer 3_{10} -helices. *Protein Eng.* **12**:811-814.
69. Basu, G., Kitao, A., Kuki, A., & Go, N. (1998) Protein Electron Transfer Reorganization Energy Spectrum from Normal Mode Analysis. II. Application to Ru-modified Cytochrome c. *J. Phys. Chem. B* **102**:2085-2094.
70. Basu, G., Kitao, A., Kuki, A., & Go, N. (1998) Protein Electron Transfer Reorganization Energy Spectrum from Normal Mode Analysis. I. Theory. *J. Phys. Chem. B* **102**:2076-2084.
71. Kuki, A., Anglos, A., Augspurger, J. D., Basu, G., Bindra, V. A., Kubasik, M., Pettijohn, A. (1997) Molecular Optical Rails Based on Aib, in *Modular Chemistry*, J. Michl (ed.) pp 503 - 516 Kluwer, Academic Publishers.
72. Chong, S., Miura, S., Basu, G., & Hirata, F. (1995) A Molecular Theory for the Non-Equilibrium Free Energy Surface in Electron Transfer Reaction. *J. Phys. Chem.* **99**:10526-10529.
73. Basu, G., Kitao, A., Hirata, F., Go, N. (1994) A Collective Motion Description of the 3_{10} -/ α -Helix Transition: Implications For a Natural Reaction Coordinate. *J. Am. Chem. Soc.* **116**:6307-6315.
74. Basu, G., Kubasik, M., Anglos, D. & Kuki, A. (1993) Spin-Forbidden Excitation Transfer and Heavy Atom Induced Intersystem Crossing in Linear and Cyclic Peptides. *J. Phys. Chem.* **97**:3956-3967.
75. Basu, G., Anglos, D., Kuki, A. (1993) Fluorescence Quenching in a Strongly Helical Peptide Series: The Role of Non-Covalent Pathways in Modulating Electronic Interaction. *Biochemistry* **32**:3067-3076.
76. Basu, G., Kuki, A. (1993) Evidence for a 3_{10} - helical Conformation of an Eight-Residue Peptide from ^1H - ^1H Rotating Frame Overhauser Studies. *Biopolymers* **33**:995-1000.
77. Basu, G., Kuki, A. (1992) Conformational Preferences of Oligopeptides Rich in α -Aminoisobutyric Acid. II. A Model For The 3_{10} - / α -Helical Transition with Composition and Sequence Sensitivity. *Biopolymers* **32**:61-71.
78. Basu, G., Bagchi, K., Kuki, A. (1991) Conformational Preferences of Oligopeptides Rich in α -aminoisobutyric Acid. I. Observation of a 3_{10} - / α -Helical Transition upon Sequence Permutation. *Biopolymers* **31**:1763-1774.
79. Basu, G., Kubasik, M., Anglos, D., Secor, B. & Kuki, A. (1990) Long-Range Electronic Interactions in Peptides: The Remote Heavy Atom Effect. *J. Am. Chem. Soc.* **112**:9410-9411.