

## SASI'S FULL ACADEMIC PUBLICATIONS LIST

### Page 1

- 1 Ramachandran, G.N. & Sasisekharan, V. Cylindrical lattice structure of collagen. *Arch Biochem Biophys* **63**, 255-257 (1956).
- 2 Ramachandran, G.N. & Sasisekharan, V. Structure of collagen. *Nature* **190**, 1004-1005 (1961).
- 3 Sasisekharan V. Stereochemical criteria for polypeptide and protein structures. In: Ramanathan N, ed., Collagen, New York: John Wiley: 39-78. (1962).
- 4 Ramachandran, G.N., Ramakrishnan, C. & Sasisekharan, V. Stereochemistry of polypeptide chain configurations. *J Mol Biol* **7**, 95-99 (1963).
- 5 Ramachandran, G.N. & Sasisekharan, V. Refinement of the structure of collagen. *Biochim Biophys Acta* **109**, 314-316 (1965).
- 6 Ramachandran, G.N., Sasisekharan, V. & Ramakrishnan, C. Molecular structure of polyglycine II. *Biochim Biophys Acta* **112**, 168-170 (1966).
- 7 Ramachandran, G.N. & Sasisekharan, V. Conformation of polypeptides and proteins. *Adv Protein Chem* **23**, 283-438 (1968).
- 8 Ponnuswamy, P.K. & Sasisekharan, V. Studies on the conformation of amino acids. 8. Backbone and side-chain conformations of C-terminal residues in peptides. *Biochim Biophys Acta* **221**, 159-164 (1970).
- 9 Ponnuswamy, P.K. & Sasisekharan, V. Studies on the conformation of amino acids. VII. Backbone and side-chain conformations of N-terminal residues in peptides. *Biochim Biophys Acta* **221**, 153-158 (1970).
- DNA 10 Lakshminarayanan, A.V. & Sasisekharan, V. Stereochemistry of nucleic acids and polynucleotides. II. Allowed conformations of the monomer unit for different ribose puckerrings. *Biochim Biophys Acta* **204**, 49-59 (1970).
- 11 Ponnuswamy, P.K. & Sasisekharan, V. Studies on the conformation of amino acids. II. Potential energy of conformation of glycine, alanine and aminobutyric acid. *Int J Protein Res* **2**, 37-45 (1970).
- 12 Sasisekharan, V. & Ponnuswamy, P.K. Backbone and side-chain conformations of amino acids and amino acid residues in peptides. *Biopolymers* **9**, 1249-1256 (1970).
- 13 Ponnuswamy, P.K. & Sasisekharan, V. Studies on the conformation of amino acids. III. Backbone conformation of N- and C-terminal glycyl and alanyl residues. *Int J Protein Res* **2**, 47-57 (1970).
- 14 Ponnuswamy, P.K., Lakshminarayanan, A.V. & Sasisekharan, V. Studies on the conformation of amino acids. 13. Conformations of arginine side group. *Biochim Biophys Acta* **229**, 596-602 (1971).
- 15 Sasisekharan, V. & Ponnuswamy, P.K. Studies on the conformation of amino acids. X. Conformations of norvalyl, leucyl and aromatic side groups in a dipeptide unit. *Biopolymers* **10**, 583-592 (1971).
- 16 Ponnuswamy, P.K. & Sasisekharan, V. Studies on the conformation of amino acids. IX. Conformations of butyl, seryl, threonyl, cystenyl, and valyl residues in a dipeptide unit. *Biopolymers* **10**, 565-582 (1971).
- 17 Ponnuswamy, P.K. & Sasisekharan, V. Studies on the conformation of amino acids. V. Conformation of amino acids with delta-atoms. *Int J Protein Res* **3**, 9-18 (1971).
- 18 Ponnuswamy, P.K. & Sasisekharan, V. Studies on the conformation of amino acids. IV. Conformations of serine, threonine, cysteine, and valine. *Int J Protein Res* **3**, 1-8 (1971).
- DNA 19 Renugopalakrishnan, V., Lakshminarayanan, A.V. & Sasisekharan, V. Stereochemistry of nucleic acids and polynucleotides. 3. Electronic charge distribution. *Biopolymers* **10**, 1159-1167 (1971).
- 20 Ramachandran, G.N., Kolaskar, A.S., Ramakrishnan, C. & Sasisekharan, V. The mean geometry of the peptide unit from crystal structure data. *Biochim Biophys Acta* **359**, 298-302 (1974).
- 21 Kolaskar, A. S., Sarathy, K. P., Sasisekharan, V. The Need for a Modified Psi potential in the Dipeptide Model, *Current Science*, **44** (02) (1975).
- 22 Kolaskar, A.S., Lakshminarayanan, A.V., Sarathy, K.P. & Sasisekharan, V. The nonplanar peptide unit. III. Quantum chemical calculations for related compounds and experimental X-ray diffraction data. *Biopolymers* **14**, 1081-1094 (1975).
- 23 Sasisekharan, V., Zimmerman, S. & Davies, D.R. The structure of helical 5'-guanosine monophosphate. *J Mol Biol* **92**, 171-179 (1975).
- DNA 24 Sasisekharan, V., Pattabiraman, N. Double stranded polynucleotides: two typical alternative conformations for nucleic acids, *Current Science*, **45**(22) 779-783 (1976).
- 25 Jagadeeswaran, P., Cherayil, Joseph D., Pattabiraman, N., Sasisekharan, V. A Computer Method for Predicting the Sequence of tRNA from its Enzymatic Digestion Products on its Secondary Structure, *Current Science*, **46**(20) (1977)
- DNA 26 Sasisekharan, V., Pattabiraman, N., Gupta, Goutam. An Alternative Structure for DNA and its Relevance to DNA Supercoiling, *Current Science*, **46**(22) 763-764 (1977)
- 27 Ramani, R., Sasisekharan, V. & Venkatesan, K. Conformational studies on cyclic dipeptides. *Int J Pept Protein Res* **9**, 277-292 (1977).
- DNA 28 Sasisekharan, V. & Pattabiraman, N. Structure of DNA predicted from stereochemistry of nucleoside derivatives. *Nature* **275**, 159-162 (1978).
- DNA 29 Sasisekharan, V., Pattabiraman, N. & Gupta, G. Some implications of an alternative structure for DNA. *Proc Natl Acad Sci U S A* **75**, 4092-4096 (1978).
- DNA 30 Gupta, G. & Sasisekharan, V. Theoretical calculations of base-base interactions in nucleic acids: II. Stacking interactions in polynucleotides. *Nucleic Acids Res* **5**, 1655-1673 (1978).
- DNA 31 Gupta, G. & Sasisekharan, V. Theoretical calculations of base-base interactions in nucleic acids: I. Stacking interactions in free bases. *Nucleic Acids Res* **5**, 1639-1653 (1978).
- 32 Balaji, V. N., Sasisekharan, V. Fourfold Helical Structures for Sequential Copolymers of Glycine and Amino Acid Residues Proline and Hydroxyproline, *Current Science*, **47**(12) (1978).
- 33 Venkataraman, B. V., Sasisekharan, V. Conformation of Poly-( $\alpha$ -Aminoisobutyric Acid): A Modified  $\alpha$ -Helix, *Current Science*, **48**(12) (1979).
- 34 Raghavendra, K. & Sasisekharan, V. Conformational analysis of the right-hand twisted antiparallel beta-structure. *Int J Pept Protein Res* **14**, 326-338 (1979).
- 35 Bhat, T.N., Sasisekharan, V. & Vijayan, M. An analysis of side-chain conformation in proteins. *Int J Pept Protein Res* **13**, 170-184 (1979).
- DNA 36 Sasisekharan, V., Gupta, Goutam. On the alternative structure of DNA: Role of syn conformation of the bases, *Current Science*, **49**(2) 43-48 (1980).
- 37 Pattabiraman, N., Sasisekharan, V. Description of ring puckering of furanose: An analytical approach, *Pramana*, **15**(5) 399-405 (1980)
- DNA 38 Gupta, G., Bansal, M. & Sasisekharan, V. Reversal of handedness in DNA: a stable link between RU and LZ helices. *Biochem Biophys Res Commun* **97**, 1258-1267 (1980).
- DNA 39 Gupta, G., Bansal, M. & Sasisekharan, V. Conformational flexibility of DNA: polymorphism and handedness. *Proc Natl Acad Sci U S A* **77**, 6486-6490 (1980).
- DNA 40 Gupta, G., Bansal, M. & Sasisekharan, V. A novel Z-structure for poly d(GC).poly d(GC). *Biochem Biophys Res Commun* **95**, 728-733 (1980).
- DNA 41 Pattabiraman, N., Rao, S.N. & Sasisekharan, V. Is 3'-nucleotide rigid? *Nature* **284**, 187-188 (1980).
- DNA 42 Rao, S.N. & Sasisekharan, V. Conformational studies on 3'-nucleotides: significance of the flexibility of nucleotides. *Indian J Biochem Biophys* **18**, 303-310 (1981).
- DNA 43 Sasisekharan, V., Brahmachari, Samir K. B to Z Transition in DNA Fibre: The question of handedness of the duplex, *Current Science*, **50**(1) 10-13 (1981).

## SASI'S FULL ACADEMIC PUBLICATIONS LIST

### Page 2

- 44 Nambudripad, R., Bansal, M. & Sasisekharan, V. Role of non-planar peptide unit in regular polypeptide helices. New model for poly-beta-benzyl-L-Aspartate. *Int J Pept Protein Res* **18**, 374-382 (1981).
- DNA 45 Gupta, G., Rao, S.N. & Sasisekharan, V. Conformational flexibility of DNA: an extension of the stereochemical guidelines. *FEBS Lett* **150**, 424-428 (1982).
- DNA 46 Ramaswamy, N., Bansal, M., Gupta, G. & Sasisekharan, V. Left-handed helices for DNA: studies on poly[d(I-C)]. *Proc Natl Acad Sci U S A* **79**, 6109-6113 (1982).
- DNA 47 Datta, S. & Sasisekharan, V. Structure of DNA-binding to hydroxyapatite as a probe. *Indian J Biochem Biophys* **19**, 71-74 (1982).
- DNA 48 Gupta, G. et al. Poly(dA-dT).poly(dA-dT) in low salt appears to be a left-handed B-helix combined use of chemical theory, fiber diffraction and NMR spectroscopy. *J Biomol Struct Dyn* **1**, 395-416 (1983).
- DNA 49 Rajagopalan, M., Gupta, G. & Sasisekharan, V. Base-base interactions in nucleic acids containing A-T base pairs. Structure of poly[d(A-T)]. *FEBS Lett* **159**, 285-289 (1983).
- 50 Rajagopalan, M., Brahmachari, S.K., Sasisekharan, V. & Srivastava, R. X-ray diffraction studies on Mycobacterium smegmatis DNA. *Biopolymers* **22**, 1633-1635 (1983).
- DNA 51 Ramaswamy, N., Bansal, M., Gupta, G. & Sasisekharan, V. Structure of D-DNA: 8-fold or 7-fold helix? *EMBO J* **2**, 1557-1560 (1983).
- DNA 52 Sasisekharan, V. Left-handed DNA duplexes. *Cold Spring Harb Symp Quant Biol* **47 Pt 1**, 45-52 (1983).
- DNA 53 Datta, S., Parrack, P.K. & Sasisekharan, V. Fibre diffraction of lithium DNA shows structural variability and deviation from a regular helical structure for the B-form. *FEBS Lett* **176**, 110-114 (1984).
- DNA 54 Rao, S.N. & Sasisekharan, V. Conformations of 3-methylpurine nucleosides: implications on the structure of DNA duplexes. *Indian J Biochem Biophys* **21**, 222-226 (1984).
- DNA 55 Parrack, P.K., Datta, S. & Sasisekharan, V. A detailed study of Li-DNA fibres at various salt concentrations reveals a non-helical B-DNA and a possible similarity of solution and solid state structures. *J Biomol Struct Dyn* **2**, 149-157 (1984).
- 56 Sasisekharan, V. Erratum. *J Biomol Struct Dyn* **3**, vii (1985).
- 57 Balaji, V.N., Rao, M.J., Rao, S.N., Dietrich, S.W. & Sasisekharan, V. Geometry of proline and hydroxyproline I: An analysis of X-ray crystal structure data. *Biochem Biophys Res Commun* **140**, 895-900 (1986).
- 58 Dasgupta, D., Rajagopalan, M. & Sasisekharan, V. DNA-binding characteristics of a synthetic analogue of distamycin. *Biochem Biophys Res Commun* **140**, 626-631 (1986).
- DNA 59 Conrad, M., Brahmachari, S.K. & Sasisekharan, V. DNA structural variability as a factor in gene expression and evolution. *Biosystems* **19**, 123-126 (1986).
- DNA 60 Rao, S.N. & Sasisekharan, V. Conformations of dinucleoside monophosphates in relation to duplex DNA structures. *Biopolymers* **25**, 17-30 (1986).
- DNA 61 Majumder, K., Brahmachari, S.K. & Sasisekharan, V. Sequence dependence and role of 5'-phosphate in the B to Z transition. *FEBS Letters* **198**, 240-244 (1986).
- 62 Sasisekharan, V. A new method for generation of quasi-periodic structures with n fold axes: Application to five and seven folds *Pramana - J. Phys.*, **26(3)** L283-L293 (1986)
- 63 Dasgupta, D., Parrack, P. & Sasisekharan, V. Interaction of synthetic analogues of distamycin with poly(dA-dT): role of the conjugated N-methylpyrrole system. *Biochemistry* **26**, 6381-6386 (1987).
- 64 Parrack, P., Dasgupta, D., Ayyer, J. & Sasisekharan, V. Interaction of synthetic analogs of distamycin with DNA. Role of the conjugated N-methylpyrrole system in specificity of binding. *FEBS Lett* **212**, 297-301 (1987).
- 65 Rao, K.E., Dasgupta, D. & Sasisekharan, V. Interaction of synthetic analogues of distamycin and netropsin with nucleic acids. Does curvature of ligand play a role in distamycin-DNA interactions? *Biochemistry* **27**, 3018-3024 (1988).
- 66 Chandrasekhar, I. & Sasisekharan, V. The nomenclature and conformational analysis of lipids and lipid analogues. *Mol Cell Biochem* **91**, 173-182 (1989).
- 67 Rao, K.E., Ramesh, N., Choudhury, D., Brahmachari, S.K. & Sasisekharan, V. Role of the environment in the interaction of nonintercalators with Z-DNA. *J Biomol Struct Dyn* **7**, 335-345 (1989).
- 68 Sasisekharan, V., Baranidharan, S., Balagurusamy, V. S. K., Srinivasan, A., Gopal, E. S. R. Non-periodic tilings in 2-dimensions with 4, 6, 8, 10 and 12-fold symmetries, *Pramana - J. Phys.*, **33(3)** 405-420 (1989)
- 69 Balagurusamy, V. S. K., Baranidharan, S., Gopal, E. S. R., Sasisekharan, V. Diffraction properties of one-dimensional finite size fibonacci quasilattice, *Pramana - J. Phys.*, **34 (6)** 525-536 (1990)
- 70 Baranidharan, S., Gopal, E. S. R., Sasisekharan, V. Generation of aperiodic tilings with fivefold symmetry by the method of intersecting decagons and diffraction from finite size tilings, *Pramana - J. Phys.*, **34(6)** 537-553 (1990)
- 71 Sasisekharan, V., Bansal, M. Self-similarity and the assembly of collagen molecules, *Current Science*, **59(17-18)** 863-866 (1990).
- 72 Dasgupta, D., Howard, F.B., Sasisekharan, V. & Miles, H.T. Drug-DNA binding specificity: binding of netropsin and distamycin to poly(d2NH2A-dT). *Biopolymers* **30**, 223-227 (1990).
- 73 Raghunathan, G., Jernigan, R.L., Miles, H.T. & Sasisekharan, V. Conformational feasibility of a hairpin with two purines in the loop. 5'-d-GGTACIAGTACC-3'. *Biochemistry* **30**, 782-788 (1991).
- 74 Howard, F.B. et al. Structure of d(T)n.d(A)n.d(T)n: the DNA triple helix has B-form geometry with C2'-endo sugar pucker. *Biochemistry* **31**, 10671-10677 (1992).
- 75 Balagurumoorthy, P., Brahmachari, S.K., Mohanty, D., Bansal, M. & Sasisekharan, V. Hairpin and parallel quartet structures for telomeric sequences. *Nucleic Acids Res* **20**, 4061-4067 (1992).
- 76 Liu, K., Miles, H.T., Frazier, J. & Sasisekharan, V. A novel DNA duplex. A parallel-stranded DNA helix with Hoogsteen base pairing. *Biochemistry* **32**, 11802-11809 (1993).
- 77 Raghunathan, G., Miles, H.T. & Sasisekharan, V. Symmetry and molecular structure of a DNA triple helix: d(T)n.d(A)n.d(T)n. *Biochemistry* **32**, 455-462 (1993).
- 78 Raghunathan, G., Miles, H.T. & Sasisekharan, V. Parallel nucleic acid helices with Hoogsteen base pairing: symmetry and structure. *Biopolymers* **34**, 1573-1581 (1994).
- 79 Venkataraman, G., Sasisekharan, V., Cooney, C.L., Langer, R. & Sasisekharan, R. A stereochemical approach to pyranose ring flexibility: its implications for the conformation of dermatan sulfate. *Proc Natl Acad Sci U S A* **91**, 6171-6175 (1994).
- 80 Liu, K., Miles, H.T., Parris, K.D. & Sasisekharan, V. Fibre-type X-ray diffraction patterns from single crystals of triple helical DNA. *Nat Struct Biol* **1**, 11-12 (1994).

## SASI'S FULL ACADEMIC PUBLICATIONS LIST

### Page 3

- 81 Kandimalla, E.R., Manning, A.N., Venkataraman, G., Sasisekharan, V. & Agrawal, S. Single strand targeted triplex formation: targeting purine-pyrimidine mixed sequences using abasic linkers. *Nucleic Acids Res* **23**, 4510-4517 (1995).
- 82 Raghunathan, G., Miles, H.T. & Sasisekharan, V. Symmetry and structure of RNA and DNA triple helices. *Biopolymers* **36**, 333-343 (1995).
- 83 Venkataraman, G., Sasisekharan, V., Cooney, C.L., Langer, R. & Sasisekharan, R. Complex flexibility of the transforming growth factor beta superfamily. *Proc Natl Acad Sci U S A* **92**, 5406-5410 (1995).
- 84 Liu, K., Sasisekharan, V., Miles, H.T. & Raghunathan, G. Structure of Py.Pu.Py DNA triple helices. Fourier transforms of fiber-type x-ray diffraction of single crystals. *Biopolymers* **39**, 573-589 (1996).
- 85 Venkataraman, G. et al. Preferential self-association of basic fibroblast growth factor is stabilized by heparin during receptor dimerization and activation. *Proc Natl Acad Sci U S A* **93**, 845-850 (1996).
- Kandimalla, E.R., Venkataraman, G., Sasisekharan, V. & Agrawal, S. Single-stranded DNA and RNA targeted triplex-formation: UV, CD and 86 molecular modeling studies of foldback triplexes containing different RNA, 2'-OMe-RNA and DNA strand combinations. *J Biomol Struct Dyn* **14**, 715-726 (1997).
- 87 Kandimalla, E.R. et al. Mixed backbone antisense oligonucleotides: design, biochemical and biological properties of oligonucleotides containing 2'-5'-ribo- and 3'-5'-deoxyribonucleotide segments. *Nucleic Acids Res* **25**, 370-378 (1997).
- 88 Sasisekharan V, Yathindra N. The Madras Group and the structure of collagen, Proc. Indian Acad Sci (Chem Sci), **111**(1) 5-12 (1999).
- 89 Venkataraman, G., Raman, R., Sasisekharan, V. & Sasisekharan, R. Molecular characteristics of fibroblast growth factor-fibroblast growth factor receptor-heparin-like glycosaminoglycan complex. *Proc Natl Acad Sci U S A* **96**, 3658-3663 (1999).
- Raman, R., Myette, J., Venkataraman, G., Sasisekharan, V. & Sasisekharan, R. Identification of structural motifs and amino acids within the 90 structure of human heparan sulfate 3-O-sulfotransferase that mediate enzymatic function. *Biochem Biophys Res Commun* **290**, 1214-1219 (2002).
- 91 Raman, R., Venkataraman, G., Ernst, S., Sasisekharan, V. & Sasisekharan, R. Structural specificity of heparin binding in the fibroblast growth factor family of proteins. *Proc Natl Acad Sci U S A* **100**, 2357-2362 (2003).
- 92 Raman, R., Sasisekharan, V. & Sasisekharan, R. Structural insights into biological roles of protein-glycosaminoglycan interactions. *Chem Biol* **12**, 267-277 (2005).
- 93 Srinivasan, A. et al. Quantitative biochemical rationale for differences in transmissibility of 1918 pandemic influenza A viruses. *Proc Natl Acad Sci U S A* **105**, 2800-2805 (2008).
- 94 Chandrasekaran, A. et al. Glycan topology determines human adaptation of avian H5N1 virus hemagglutinin. *Nat Biotechnol* **26**, 107-113 (2008).
- 95 Soundararajan, V. et al. Extrapolating from sequence--the 2009 H1N1 'swine' influenza virus. *Nat Biotechnol* **27**, 510-513 (2009).
- 96 Viswanathan, K. et al. Glycans as receptors for influenza pathogenesis. *Glycoconj J* **27**, 561-570 (2010).
- 97 Soundararajan, V., Raman, R., Raguram, S., Sasisekharan, V. & Sasisekharan, R. Atomic interaction networks in the core of protein domains and their native folds. *PLoS One* **5**, e9391 (2010).
- 98 Soundararajan, V. et al. Networks link antigenic and receptor-binding sites of influenza hemagglutinin: mechanistic insight into fitter strain propagation. *Sci Rep* **1**, 200 (2011).
- 99 Soundararajan, V., Patel, N., Subramanian, V., Sasisekharan, V. & Sasisekharan, R. The many faces of the YopM effector from plague causative bacterium *Yersinia pestis* and its implications for host immune modulation. *Innate Immun* **17**, 548-557 (2011).
- 100 Tharakaraman, K. et al. Glycan receptor binding of the influenza A virus H7N9 hemagglutinin. *Cell* **153**, 1486-1493 (2013).
- 101 Tharakaraman, K. et al. Structural determinants for naturally evolving H5N1 hemagglutinin to switch its receptor specificity. *Cell* **153**, 1475-1485 (2013).
- 102 Tharakaraman, K. et al. Antigenically intact hemagglutinin in circulating avian and swine influenza viruses and potential for H3N2 pandemic. *Sci Rep* **3**, 1822 (2013).
- 103 Tharakaraman, K. et al. Redesign of a cross-reactive antibody to dengue virus with broad-spectrum activity and increased in vivo potency. *Proc Natl Acad Sci U S A* **110**, E1555-1564 (2013).
- 104 Raman, R. et al. Glycan receptor specificity as a useful tool for characterization and surveillance of influenza A virus. *Trends Microbiol* **22**, 632-641 (2014).
- 105 Tharakaraman, K., Subramanian, V., Cain, D., Sasisekharan, V. & Sasisekharan, R. Broadly neutralizing influenza hemagglutinin stem-specific antibody CR8020 targets residues that are prone to escape due to host selection pressure. *Cell Host Microbe* **15**, 644-651 (2014).
- 106 Robinson, L.N. et al. Structure-Guided Design of an Anti-dengue Antibody Directed to a Non-immunodominant Epitope. *Cell* **162**, 493-504 (2015).
- 107 Raman, R., Tharakaraman, K., Sasisekharan, V. & Sasisekharan, R. Glycan-protein interactions in viral pathogenesis. *Curr Opin Struct Biol* **40**, 153-162 (2016).
- 108 Raguram, A., Sasisekharan, V. & Sasisekharan, R. A Chiral Pentagonal Polyhedral Framework for Characterizing Virus Capsid Structures. *Trends Microbiol* **25**, 438-446 (2017).