Curriculum Vitae of Anita Scipioni

Dr. Scipioni obtained the master degree in Chemistry summa cum laude at the University of Rome La Sapienza in1983.
In the period October 1983-March 1984 received a grant from ENEA for research about the treatment of nuclear fuel.
In the period April-October 1984 received a fellowship from Istituto Superiore di Sanità for research concerning the monitoring of heavy metals in biological fluids using Atomic Absorption.
She received the PhD in Chemical Sciences in 1988.
From 1988 up to 1995, she taught Chemistry in different Italian high schools.
Since 1995 up to 2016 she has been researcher in the field of physical chemistry at the Department of Chemistry of the University La Sapienza of Rome.
From 2016, she is associate professor of Physical Chemistry at the Department of Chemistry of the University La Sapienza of Rome.
From 2000 up to the current year, she has taken different courses in the field of Physical Chemistry, Experimental Physical Chemistry and Biophysical Chemistry.

She is reviewer of Biophysical Journal, Journal of Biomolecular Structure and Dynamics, BMC Genomics, IOP Sciences (Nanotechnology, Physical Biology, Journal of Physics: Condensed Matter), Interface Focus (Royal Society Publishing), Langmuir, Organic Letters, Chemical Physics Letters, Electrophoresis, DNA Research, Supramolecular Chemistry e Biophysical Chemistry, ACS Applied Materials Interfaces, Advanced Materials Interfaces and Advanced Materials
She was an external reviewer of *European Research Council* for *ERC junior* and *The Netherlands Organisation for Scientific Research (NWO).*

She obtained the Award for Excellent Teaching from the Faculty of Mathematical, Physical and Natural Sciences for the years 2014/2015 and 2016/2017.

She co-chaired the Organizing Committee and was part of the Scientific Committee of the XLVII Italian Meeting of Physical Chemistry held in Rome (July 1-4, 2019)
She is in the Organizing Committee of SILS Conference 2023 that will be held in Rome (August 30-September 1, 2023)

In the period November 1, 2019-October 31, 2022, she was the Dean of the Bachelor and Master degree of Chemical Sciences.

She is the author of about 70 papers on international journals. She held talks and seminars in scientific meetings and universities.

Her scientific activity concerns theoretical and experimental investigations on biological macromolecules, peptides and proteins, nucleic acids, membranes and model systems.
At present, her main research interests are devoted to investigating structure and physico-chemical properties of self-assembling peptide-based hybrids, such as peptide-polymer conjugates, lipopeptides and bile salt-peptide derivatives for applications in nano-medicine.

She participates in a project that focuses on peptide-based conjugates with antimicrobial activity. She is a participant of Sapienza Research Project Bile acids-based macromolecular antimicrobials for biomedical applications, 2022 and the project Rome Technopole, Flagship 7 "Advanced and automated innovation labs for diagnostic and therapeutic biopharma solutions", 2023.

Bibliometric indexes: 1190 citations, HI 18

PUBLICATIONS

71. N. S. Gjerde, A. N. Nardi, C. G. Chen, P. Di Gianvincenzo, M. D'Abramo, A. Scipioni, L. Galantini, S. E. Moya, M. Giustini, Complexation and organization of doxorubicin on polystyrene sulfonate chains: impacts on doxorubicin dimerization and quenching.
Phys. Chem. Che. Phys. **24** (2022) 25990-25998.

70. L. Raganato, A. Del Giudice, A. Ceccucci, F. Sciubba, S. Casciardi, S. Sennato, **A. Scipioni**, G. Masci, Self-assembling nanowires from a linear L,D-peptide conjugated to the dextran end group.
Int. J. Biol- Macromol. **207** (2022) 656-665.

69. C. G. Chen, M. Giustini, A. Scipioni, A. Amadei, M. D'Abramo, Theoretical modelling of the L-Alanine CD spectrum in water.
Computational and Theoretical Chemistry 1209 (2022) 113591.

68. F. Novelli, A, Strofaldi, S. De Santis, A. Del Giudice, S. Casciardi, L. Galantini, S. Morosetti, N. V. Pavel, G. Masci, **A. Scipioni**, Polymorphic self-organization of lauroyl peptide in response to pH and concentration.
Langmuir **36** (2020) 3941-3951.

67. S. De Santis, F. Novelli, F. Sciubba, S. Casciardi, S. Sennato, S. Morosetti, **A. Scipioni**, G. Masci, Switchable length nanotubes from a self-assembling pH and thermosensitive linear L,D-peptide-polymer conjugate.
J. Coll. Interface Science **547** (2019) 256-266.

66. M. Pellegrino, F. Ceccacci, **A. Scipioni**, S. De Santis, G. Mancini, A. Fierabracci
Exploiting Novel Tailored Immunotherapies of Type 1 Diabetes: Short Interfering RNA Delivered by Cationic Liposomes Enables Efficient Down-Regulation of Variant PTPN22 Gene in T Lymphocytes.
Nanomedicine: Nanotechnology, Biology, and Medicine **18** (2019) 371-379.

65. F. Novelli, S. De Santis, S. Morosetti, M. Titubante, G. Masci, **A. Scipioni** Peptides with regularly alternating enantiomeric sequence: From ion channel models to bioinspired nanotechnological applications. *Peptide Science*, e24043 (2018) 1-12.

64. F. Novelli, S. De Santis, M. Diociaiuti, C. Giordano, S: Morosetti, P. Punzi, F. Sciubba, V. Viali, G. Masci, **A. Scipioni**

Curcumin loaded nanocarriers obtained by self-assembly of a linear D,L-octapeptidepoly(ethylene glycol) conjugate.
Eur. Polym. J. **98** (2018) 28-38.

63. A. Mollica, G. Macedonio, A. Stefanucci, R. Costante, S. Carradori, V. Cataldi, M. Di Giulio, L. Cellini, R. Silvestri, C. Giordano, **A. Scipioni**, P. Punzi, S. Mirzaie
Arginine- and Lysine-rich Peptides: Synthesis, Characterization and Antimicrobial Activity.
Lett. in Drug Design and Discovery **15** (2018) 220-226.

62. G. Costanzo, A. Giorgi, **A. Scipioni**, A. M. Timperio, C. Mancone, M. Tripodi, M. Kapralov, E. Krasavin, H. Kruse, J. Šponer, J. E. Šponer, S. Pino, E. Di Mauro
Non-Enzymatic Oligomerization of 3',5' Cyclic CMP and 3',5' Cyclic GMP under Different Energy Sources Hints at a Non-Fastidious Origin of RNA.
ChemBioChem **18** (2017) 1535-1543.

61. V. Perri, F. Ceccacci, M. Pellegrino, **A. Scipioni**, S. Petrini, E. Gianchecchi, A. Lorusso, S. De Santis, G. Mancini, A. Fierabracci
Use of short interfering RNA delivered by cationic liposomes to enable efficient downregulation of ptpn22 gene in human t lymphocytes.
PLoS ONE **12** (2017) e0175784.

60. S. De Santis, R. Chiaraluce, V. Consalvi, F. Novelli, M. Petrosino, P. Punzi, F. Sciubba, C. Giordano, G. Masci, **A. Scipioni**
PEGylated b-sheet breaker peptides as inhibitors of b-amyloid fibrillization. *ChemPlusChem* **82** (2017) 241-250.

59. F. Novelli, S. De Santis, P. Punzi, C. Giordano, **A. Scipioni,** G. Masci
Self-assembly and drug release study of linear L,D-oligopeptide-poly(ethylene glycol) conjugates.
New Biotechnology **37** (2017), 96-107.
58. F. Ceccacci, A. Scipioni, B. Altieri, L. Giansanti, G. Mancini
Achiral Dye/Surfactant Heteroaggregates for Chiral sensing of Phosphocholines. *Chirality* **28** (2016) 22-28.

57. C. Pucci, A. Scipioni, M. Diociaiuti, C. La Mesa, L. Perez, R. Pons
Catanionic vesicles and DNA complexes: a strategy towards novel gene delivery systems. *RSC Advances* **5** (2015) 81168-81175.

56. P. Punzi, S. De Santis, C. Giordano, M. Diociaiuti, F. Novelli, G. Masci, **A. Scipioni**
Bioinspired nanotubes from self-assembly of a linear L,D-oligopeptide-polyethylene glycol) conjugate.
Macromol. Chem. Phys. **216** (2015) 439-449.

55. F. Tardani, P. Strobbia, **A. Scipioni**, C. La Mesa
Encapsulating carbon nanotubes in aqueous ds-DNA anisotropic phases: Shear orientation and rheological properties.
RSC Advances **3** (2013) 25917-25923.

54. F. Ceccacci, L. Giansanti, G. Mancini, A. Mauceri, **A. Scipioni**, C. Sperduto Transcription of chirality from molecules to complex systems: The role of hydrophobic interactions. *Supramolecular Chemistry* **25** (2013) 741-747.

53. **A. Scipioni**, P. De Santis
The elastic model in the mechanics of DNA deformations.
Physics of Life Reviews **10** (2013) 82-84.

52. P. De Santis, **A. Scipioni**
Sequence-dependent collective properties of DNAs and their role in biological systems *Physics of Life Reviews* **10** (2013) 41-67.

51. S. Aleandri, M. G. Bonicelli, L. Giansanti, C. Giuliani, M. Ierino, G. Mancini, A. Martino, **A. Scipioni**
A DSC investigation on the influence of gemini surfactant stereochemistry on the organization of lipoplexes and on their interaction with model membranes *Chemistry and Physics of Lipids* **165** (2012) 838-844.

50. P. Punzi, C. Giordano, F. Marino, S. Morosetti, P. De Santis, **A. Scipioni**
Metal chelates anchored to poly-L-peptides and linear D,L-a-peptides with promising nanotechnological applications. *Nanotechnology* **23** (2012) 395703/1-10

49. G. Costanzo, R. Saladino, G. Botta, A. Giorni, **A. Scipioni**, E. Di Mauro
Generation of RNA molecules by nonenzymatic base catalyzed polymerization.
ChemBioChem **13** (2012) 999-1008

48. C. Pucci, **A. Scipioni**, C. La Mesa
Albumin Binding onto Synthetic Vesicles.
Soft Matter **8** (2012) 9669-9675
47. **A. Scipioni,** P. De Santis
Predicting Nucleosome Positioning in Genomes: Physical and Bioinformatic Approaches.
Biophys. Chem. **155** (2011) 53-64

46. P. De Santis, S. Morosetti, **A. Scipioni**
Prediction of Nucleosome Positioning in Genomes: Limits and Perspectives of Physical and Bioinformatic Approaches.
J. Biomol. Struct. Dyn. **27** (2010) 743-764.

45. **A. Scipioni**, S. Morosetti, G. Turchetti, P. De Santis
Geometrical, conformational and topological restraints in regular nucleosome compaction in chromatin.
Biophys. Chem. **148** (2010) 56-67.

44. **A. Scipioni,** S. Morosetti, P. De Santis
A statistical thermodynamic approach for predicting the sequence dependent nucleosome positioning along genomes. *Biopolymers* **91** (2009) 1143-1153.

43. P. De Santis, **A. Scipioni**
A Statistical Thermodynamic Approach for Predicting the Sequence-Dependent Nucleosome Positioning along Genomes.
J. Biomol. Struct. Dyn. **26** (2009) 914-914.

42. **A. Scipioni,** S. Morosetti, P. De Santis
Geometrical, Conformational, and Topological Restraints in Nucleosome Compaction along Chromatin Fibers.
J. Biomol. Struct. Dyn. **26** (2009) 921-922.

41. P. De Santis, S. Morosetti, **A. Scipioni**
Peptides with regular enantiomeric sequences: a wide class of modular self-assembling architectures.
J. Nanosci. Nanotechnol. **7** (2007) 2230-2238.

40. C. Letizia, P. Andreozzi, **A. Scipioni**, C. La Mesa, A. Bonincontro, E. Spigone
Protein binding onto surfactant-based synthetic vesicles. *J. Phys. Chem. B* **111** (2007) 898-908.

39. **A. Scipioni**, S. Pisano, A. Bergia, M. Savino, B. Samorì, P. De Santis
Recognition on the nanoscale of a DNA sequence by an inorganic crystal surface. *Chembiochem* **7** (2006) 1645-1648.

38. R. Paparcone, S. Morosetti, **A. Scipioni**, P. De Santis
A statistical approach for analyzing structural and regulative information in prokaryotic genomes.
Biophys. Chem. **120** (2006) 71-79.

37. B. Samorì, G. Zuccheri, **A. Scipioni**, P. De Santis
Towards an increase of the hierarchy in the construction of DNA-based nanostructures through the integration of inorganic materials.
Invited in "*Nanotechnology: Science and Computation*" J. Chen, N. Jonoska and G. Rozemberg Eds. (2006) 215-249, Springer-Verlag Berlin Heidelberg, printed in Germany (ISBN-10 3-540-30295-6).
Source: http://www.springerlink.com/content/r34567n256357n1j/

36. P. De Santis, R. Paparcone, M. Savino, **A. Scipioni**
Mechanical Properties of Single molecules: a Theoretical Approach.
Invited in "*Scanning Probe Microscopies Beyond Imaging. Manipulation of Molecules and Nanostructures*" P. Samorì Ed. (2006) 508-533 - Wiley-VCH Verlag, printed in Germany (ISBN-10 3-527-31269-2).
Source: http://onlinelibrary.wiley.com/doi/10.1002/3527608516.ch16/summary

35. C. Anselmi, P. De Santis, **A. Scipioni**
Nanoscale mechanical and dynamical properties of DNA single molecules. *Biophys. Chem.* **113** (2005) 209-221.

34. F. Ceccacci, M. Diociaiuti, L. Galantini, G. Mancini, P. Mencarelli, **A. Scipioni**, C. Villani
A new simple procedure for discriminating between deracemization and an induced CD effect in chiral recognition experiments on atropoisomers.
Org. Lett. **6** (2004) 1565-1568.

33. **A. Scipioni**, S. Pisano, C. Anselmi, M. Savino, P. De Santis
Dual role of sequence-dependent DNA curvature in nucleosome stability: the critical test of highly-bent *Crithidia fasciculata* DNA tract.
Biophys. Chem. **107** (2004) 7-17.

32. C. Anselmi, P. De Santis, R. Paparcone, M. Savino, **A. Scipioni**
A possible role of DNA superstructures in genome evolution. *Orig. Life Evol. Biosph*. **34** (2004) 143-149.

31. P. De Santis, M. Savino, **A. Scipioni**, C. Anselmi
DNA sequence-dependent curvature and flexibility in stability and organization of nucleosomes. (
In: "*Nucleic Acids: Curvature and Deformation. Recent Advances and New Paradigms*" N. C. Stellwagen and U. Mohanty Eds. - ACS Symposium Series 884 – American Chemical Society - Division of Physical Chemistry (Washington, DC, USA) (2004) 219-231 (ISBN 0-8412-3862-6 - ISSN**:** 0097-6156

30. S. Borocci, F. Ceccacci, L. Galantini, G. Mancini, D. Monti, **A. Scipioni**, A. Venanzi
Deracemization of an axially chiral biphenylic derivative as a tool for investigating chiral recognition in self-assemblies.
Chirality **15** (2003) 441-447.

29. N. Besker, C. Anselmi, R. Paparcone, **A. Scipioni**, M. Savino, P. De Santis
Systematic search for compact structures of telomeric nucleosomes. *FEBS Lett*. **554** (2003) 369-372.

28. **A. Scipioni**, G. Zuccheri, C. Anselmi, A. Bergia, B. Samorì, P. De Santis
Sequence-dependent DNA dynamics by scanning force microscopy time-resolved imaging. *Chemistry and Biology* **9** (2002) 1315-1321.

27. B. Sampaolese, A. Bergia, **A. Scipioni**, G. Zuccheri, M. Savino, B. Samorì, P. De Santis
Recognition of the DNA sequence by an inorganic crystal surface. *Proc. Natl. Acad. Sci*. USA **99** (2002) 13566-13570.

26. G. Zuccheri, A. Bergia, **A. Scipioni**, P. De Santis, B. Samorì,
DNA on surfaces: Adsorption, equilibration and recognition processes from a microscopist's view
In *DNA-based molecular construction book series: AIP Conference Proceedings* **640** (2002) 23-37.

25. **A. Scipioni**, C. Anselmi, G. Zuccheri, B. Samorì, P. De Santis

Sequence-dependent DNA curvature and flexibility from scanning force microscopy images. *Biophys. J.* **83** (2002) 2408-2418.

24. C. Canzonetta, R. Caneva, M. Savino, **A. Scipioni**, B. Catalanotti, A. Galeone Circular dichroism and thermal melting differentiation of Hoechst 33258 binding to the curved (A_4T_4) and straight (T_4A_4) DNA sequences.
Biochim. Biophys. Acta -Gene Structures and Expression (attuale Biochim. Biophys. Acta–Gene Regulatory Mechanisms) **1576** (2002) 136-142.

23. C. Anselmi, P. De Santis, R. Paparcone, M. Savino, **A. Scipioni** From the sequence to the superstructural properties of DNAs.
Biophys. Chem. **95** (2002) 23-47.

22. D. Monti, L. La Monica, **A. Scipioni**, G. Mancini
Effect of the inclusion of sodium cations on the binding properties of a switchable diporphyrin receptor.
New J. Chem. **25** (2001) 780-782.

21. G. Zuccheri, **A. Scipioni**, V. Cavalieri, G. Gargiulo, P. De Santis, B. Samorì Mapping the instrinsic curvature and the flexibility along the DNA chain. *Proc. Natl. Acad. Sci*. USA **98** (2001) 3074-3079.

20. C. Anselmi, G. Bocchinfuso, **A. Scipioni**, P. De Santis Identification of Protein Domains on Topological Basis.
Biopolymers **58** (2001) 218-229.

19. C. Anselmi, G. Bocchinfuso, P. De Santis, M. Savino, **A. Scipioni**
A Theoretical Model for the Prediction of Sequence-Dependent Nucleosome Thermodynamic Stability.
Biophys. J. **79** (2000) 79-91.

18. C. Anselmi, G. Bocchinfuso, P. De Santis, M. Savino, **A. Scipioni**
Dual Role of DNA Intrinsic Curvature and Flexibility in Determining Nucleosome Stability. *J. Mol. Biol*. **286** (1999) 1293-1301.

17. C. Anselmi, G. Bocchinfuso, P. De Santis, M. Fuà, M. Savino, **A. Scipioni**
First order elasticity in the superstructural transformations of DNAs. *Acta Pharm*. **49** (1999) 225-311.

16. C. Anselmi, G. Bocchinfuso, P. De Santis, M. Fuà, **A. Scipioni** and M. Savino Statistical Thermodynamic Approach for Evaluating the Writhe Transformations in Circular DNAs.
J. Phys. Chem. B **102** (1998) 5704-5714.

15. S. Borocci, M. Erba, G. Mancini, **A. Scipioni**
Deracemization of an Axial Chiral Biphenylic Structure in Chiral Micellar Aggregates. *Langmuir* **14** (1998) 1960-1962.

14. P. De Santis, A. Palleschi, **A. Scipioni**, M. Camalli, R. Spagna, G. Zanotti Conformations of Oligoprolines with Different Configurational Sequences and their Association Complexes with Alkali and Alkali-Earth Ions.
Biopolymers **45** (1998) 257-267

13. G. Benedetti, P. De Santis, S. Morosetti, A. Palleschi, M. Savino, **A. Scipioni** Superstructural informations in the base sequences of nucleic acids.
Invited in: "*Properties and Chemistry of Biomolecular Systems*" N. Russo, J. Anastassopoulou and G. Barone Eds., Kluver Acad. Publ. (1994) 93-108, printed in the Netherlands (ISBN 0-7923-2666-0).

12. P. De Santis, A. Palleschi, M. Savino, **A. Scipioni**
Theoretical prediction of the gel electrophoretic retardation changes due to point mutations in a tract of Sv40 DNA.
Biophys. Chem. **42** (1992) 147-152.

11. D. Boffelli, P. De Santis, A. Palleschi, **A. Scipioni**, M. Savino
Theoretical prediction of sequence dependent DNA superstructures and their implications in recognition mechanisms with proteins.
Int. J. of Quantum Chemistry **42** (1992) 1409-1426.

10. P. De Santis, A. Palleschi, M. Savino and **A. Scipioni**
Theoretical prediction of sequence dependent DNAs superstructures and their implications in recognition mechanisms with proteins. Nucleic Acids Symposium Series (1991) 83-84 (ISSN 0261-3166). Source: http://www.ncbi.nlm.nih.gov/pubmed/1842107

9. P. De Santis, A. Palleschi, M. Savino, **A. Scipioni**
Validity of the nearest-neighbor approximation in the evaluation of the electrophoretic manifestations of DNA curvature. *Biochemistry* **29** (1990) 9269-9273.

8. P. De Santis, G. Gallo, A. Palleschi, M. Savino, **A. Scipioni** A theoretical model of the sequence dependent superstructures of DNA. *J. Mol. Liq*. **41** (1989) 291-304.

7. P. De Santis, **A. Scipioni**, A. Palleschi, M. Savino
Structure and stability of Boc(DPro-LPro)$_2$OCH$_3$Na$^+$ complex: a model of Poly(DL-Proline) an alkali ions channel accross membranes.
Biopolymers **28** (1989) 285-296.
6. P. De Santis, A. Palleschi, M. Savino, **A. Scipioni** A theoretical model of DNA curvature.
Biophys. Chem. **32** (1988) 305-317.

5. P. De Santis, A. Palleschi, M. Savino, **A. Scipioni**
Poly-(DL-proline), a synthetic polypeptide behaving as ion channel across membranes: conformational studies on ion complexes of the Tetramer Boc (DPro, LPro)$_2$OCH$_3$. *J. Phys. Chem*. **92** (1988) 4759-4765.

4. P. De Santis, A. Palleschi, S. Morosetti, M. Savino, **A. Scipioni**
Structural information in deterministic fluctuations of base sequences in DNAs. Theoretical prediction of DNA superstructures.
In "*Biological and Artificial Intelligence Systems*" (1988) pp. 143-154,
E. Clementi and J. Chin. Editors Publisher: ESCOM Sciente Publishers, Netherlands (ISBN 90-72199-02-2).

3. F. G. Calascibetta, P. De Santis, S. Morosetti, M. Savino, **A. Scipioni** DNA topology in a chromatin model system.
Cell Biophysics (attuale Cell Biochemistry and Biophysics) **8** (1986) 177-188.

2. P. De Santis, A. Palleschi, M. Savino, **A. Scipioni**
Channel structures in synthetic polypeptides with alternating configurations. Conformational analysis of poly(DL-proline). *Biophys. Chem.* **21** (1985) 217-225.

1. P. De Santis, A. Palleschi, M. Savino, **A. Scipioni**, B. Sesta, A. Verdini
Poly(DL-proline), a synthetic polypeptide behaving as an ion channel across bilayer membranes.
Biophys. Chem. **21** (1985) 211-215.