

Dr. Spyros Georgatos Full CV

Personal data

Date of birth: September 25, 1956

Place of birth: Pireas, Greece

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Degrees

1974: High School diploma (Ionideios Prottypos Scholi)

1980: Ptychion (Medical Degree) in Medicine, National University of Athens, Greece

1985: Ph.D. in Biology, Dept. of Biology, Yale University, USA

Positions held

1980-1981: Research Fellow, Department of Biology, California Institute of Technology, USA

1981-1984: Graduate Student, Biology Department, Yale University, USA

1984-1986: Post-doctoral Fellow, Laboratory of Cell Biology, Rockefeller University, USA

1987: Research Associate, Laboratory of Cell Biology, Rockefeller University, USA

1988-1989: Assistant Professor, Laboratory of Cell Biology, Rockefeller University, USA

1990-1995: Group Leader, Cell Biology Programme, European Molecular Biology Laboratory (EMBL), Germany

1995-2001: Associate Professor of Cell Biology, Division of basic Sciences, Medical School, University of Crete, Greece

2002- present: Professor of General Biology and Head of the laboratory of Biology, Medical School, University of Ioannina, Greece

Teaching experience

1977-1980: Teaching fellow in "Histology-Embryology" undergraduate laboratory course, Medical School, National University of Athens, Greece

1981: Teaching fellow in "Biology of Reproduction" undergraduate laboratory course, Biology Department, Yale University, USA

1987-1989: Instructor in "Cell Biology" graduate course, Rockefeller University, USA

1990-1995: Instructor in practical graduate courses, EMBL, Germany

1995-1997: Instructor in the elective graduate course "Cell Cycle", Medical School, University of Crete, Greece

1995-2001: Instructor in the undergraduate course "Biology", Medical School, University of Crete, Greece

1998-1999: Instructor in the elective graduate course "Cytoskeleton", Medical School,

University of Crete, Greece

1998-present: Instructor in the core graduate course “Molecular Cell Biology”, Medical School, University of Crete, Greece

2002-present: Instructor in the undergraduate course “Biology”, Medical School, University of Ioannina, Greece

2002-present: Instructor in the graduate courses “Methods in Biological Research” and “Molecular Cell Biology”, Medical School, University of Ioannina, Greece

Research Grants

1989: Irma T. Hirsch/Monique Weil - Caulier Career Scientist Award (\$100.000)

1993: Program of scientific collaboration between Greece and Germany (8820 Euro)

1995: PENED-GSRT (25000 Euro)

1995: Research Committee of the University of Crete (4000 Euro)

1996: PEP (29000 Euro)

1998: EPET II (GSRT) (60000 Euro for Georgatos group)

1999: Program of Greek-French collaboration (20000 Euro)

1999: AFM (Association Française contre les Myopathies) (37000 Euro)

1999: FP5-RTN, EC (196000 Euro for Georgatos group)

1999: PENED 99, GSRT (60000 Euro for Georgatos group)

2001: AFM (Association Française contre les Myopathies) (37000 Euro)

2002: Royal Society Award, UK(17000 Euro)

2001: PENED2001, GSRT (117000 Euro)

2003: Royal Society Award, UK(17000 Euro)

2003: EPAN, GSRT (135000 Euro for Georgatos group)

2004: Herakleitos- Ministry of Education (EPEAEK) (38000 Euro)

2005: Pythagoras II-Ministry of Education (EPEAEK) (42000 Euro)

2005: Pythagoras II-Ministry of Education (EPEAEK) (40000 Euro)

2005: PENED2003, GSRT (199088 Euro)

2005: PENED2003, GSRT (178740 Euro)

2007: Onassis Foundation (40000 Euro)

2008: Bodosakis Foundation (40000 Euro)

Honours and Distinctions

1977: Greek state awards for academic excellence (IKY)

1989: Irma T. Hirsch/Monique Weil -Caulier Career Scientist Award, USA

1998: Distinguished Scientist Visiting Award, Curie Institute, France

1999: Elected European Molecular Biology Organisation (EMBO) member

1988-present: Invited speaker in many international conferences and scientific meetings (Gordon Conferences, EMBO Meetings and Workshops, Annual Meetings of the American Society for Cell Biology etc)

Participation in scientific organisations

Member of the European Molecular Biology Organisation (EMBO)
Member of the Governing Body of the European Cyroskeletal Forum
Member of the Editorial Board of European Journal of Cell Biology
Member of the Board of Hellenic Pasteur Institute
Member of the Greek Society of Biochemistry and Molecular Biology
Member of the Medical Association of Heraklion

Academic activities and responsibilities

Set-up of the laboratory of Molecular Cell Biology, Medical School, University of Crete, Greece
Organization of the Facility for Confocal Microscopy, Medical School, University of Crete, Greece
Participation in the preparation and submission of the proposal for the interdisciplinary Graduate Program in Molecular Biology and Biomedicine, University of Crete, Greece
Supervision of M. Sc. and Ph.D. theses (6 completed, 5 in progress)
Organiser of 2 Euroconferences (*Cell Dynamics*), Heraklion, Greece (1997 and 1998)

Other activities

Reviewer of research grants for funding organizations of USA, Canada, Austria, Israel, Ireland
Reviewer in several international journals (EMBO Journal, EMBO Reports, Journal of Cell Science etc)

List of publications in peer-reviewed journals

1. Y. Markaki, A. Christogianni, A.S. Politou, **S.D. Georgatos** (2009): Phosphorylation of histone H3 at threonine-3 is part of a combinatorial pattern that marks and configures mitotic chromatin. *J. Cell Sci.*, 122:2809-2819.
2. T. Akoumianaki, D. Kardassis, H. Polioudaki, **S.D. Georgatos**, P.A. Theodoropoulos (2009) Nucleocytoplasmic shuttling of soluble tubulin in mammalian cells. *J Cell Sci.*, 122:1111-1118.
3. **S.D. Georgatos**, Y. Markaki, A. Christogianni, A.S. Politou. (2009) Chromatin remodeling during mitosis: a structure-based code? *Front Biosci.*, 14:2017-27 (invited review).
4. G.K. Dialynas, S. Terjung, J.P. Brown, R.L. Aucott, B. Baron-Luhr, P.B. Singh, **S. D. Georgatos** (2007) Plasticity of HP1 proteins in mammalian cells. *J Cell Sci.*, 120:3415-24.
5. E. Ritou, M. Bai, **S.D. Georgatos**. (2007) Variant-specific patterns and humoral regulation of HP1 proteins in human cells and tissues. *J Cell Sci.*, 120:3425-35.
6. J. Michalakis, **S.D. Georgatos**, E. de Bree, H. Polioudaki, J. Romanos, V. Georgoulas, D.D. Tsiftsis, P.A. Theodoropoulos (2007). Short-Term Exposure of Cancer Cells to Micromolar Doses of Paclitaxel, with or without Hyperthermia,

Induces Long-Term Inhibition of Cell Proliferation and Cell Death In Vitro. Ann Surg Oncol. 14:1220-1228.

1. Dialynas GK, Makatsori D, Kourmouli N, Theodoropoulos PA, McLean K, Terjung S, Singh PB, **Georgatos SD**. (2006) Methylation-independent binding to histone H3 and cell cycle-dependent incorporation of HP1beta into heterochromatin. J Biol Chem. 281:14350-60.
8. Michalakis J, **Georgatos SD**, Romanos J, Koutala H, Georgoulas V, Tsiftsis D, Theodoropoulos PA. (2005). Micromolar taxol, with or without hyperthermia, induces mitotic catastrophe and cell necrosis in HeLa cells. Cancer Chemother Pharmacol., 56:615-22.
9. D. Makatsori, N. Kourmouli, H. Polioudaki, L.D. Shultz, K. McLean, P.A. Theodoropoulos, P.B. Singh and **S. D. Georgatos** (2004). The inner nuclear membrane protein LBR forms distinct microdomains and links epigenetically marked chromatin to the nuclear envelope. J Biol Chem., 279:25567-25573.
10. H. Polioudaki, G. Markaki, N. Kourmouli, G Dialynas, P.A. Theodoropoulos, P.B. Singh and **S. D. Georgatos** (2004). Mitotic phosphorylation of histone H3 at threonine 3. FEBS Lett. 560:39-44.
11. P.B. Singh and **S.D. Georgatos** (2002). HP1: facts, open questions, and speculation. J. Struct. Biol. 140:10-16 (invited review).
12. H. Polioudaki, N. Kourmouli, V. Drosou, A. Bakou, P.A. Theodoropoulos, P.B. Singh, T. Giannakouros and **S. D. Georgatos** (2001). Histones H3/H4 form a tight complex with the inner nuclear membrane protein LBR and heterochromatin protein 1. EMBO Rep. 2:920-925.
13. **S. D. Georgatos** (2001): The inner nuclear membrane: simple, or very complex? EMBO J., 20:2989-2994(invited review).
14. N. Kourmouli, G. Dialynas, C. Petraki, A. Pyrpasopoulou, P. B. Singh, **S. D. Georgatos**, and P. A. Theodoropoulos (2001): Binding of Heterochromatin Protein 1 to the nuclear envelope is regulated by a soluble form of tubulin. J. Biol. Chem., 276:13007-1314.
15. N. Kourmouli, P. A. Theodoropoulos, G. Dialynas, A. Bakou, A. S. Politou, I.G. Cowell, P. B. Singh, and **S. D. Georgatos** (2000): Dynamic associations of Heterochromatin Protein 1 with the nuclear envelope. EMBO J., 19: 6558-6568.
16. P. A. Theodoropoulos, H. Polioudaki, O. Kostaki, S. Derdas, V. Georgoulas, C. Dargemont, and **S. D. Georgatos** (1999): Taxol affects nuclear lamina and pore complex organization and inhibits import of karyophilic proteins into the cell nucleus. Cancer Res., 59: 4625-4633.
17. **S. D. Georgatos**, and P. A. Theodoropoulos (1999): Rules to assemble by: what drives nuclear envelope reformation at the end of mitosis? Critical Reviews in Eukaryotic Gene Expression, 9: 373-381(invited review).
18. P. A. Theodoropoulos, H. Polioudaki, M. Koulentaki, E. Kouroumalis, and **S. D. Georgatos** (1999): PBC68: a nuclear pore complex protein that associates reversibly with the mitotic spindle. J. Cell Sci., 112: 3049-3059.

19. C. Maison, A. Pyrpasopoulou, P. A. Theodoropoulos and **S. D. Georgatos** (1997): The inner nuclear membrane protein LAP1 forms a native complex with B-type lamins and partitions with spindle-associated mitotic vesicles. EMBO J., 16: 4839-48550.
20. E. Nikolakaki, J. Meier, G. Simos, **S. D. Georgatos** and T. Giannakouros (1997): Mitotic phosphorylation of the lamin B receptor by a serine/arginine kinase and p34/cdc2. J. Biol. Chem., 272: 6208-6213.
21. **S. D. Georgatos**, A. Pyrpasopoulou and P. A. Theodoropoulos (1997): Nuclear envelope breakdown in mammalian cells involves stepwise lamina disassembly and microtubule-driven deformation of the nuclear membrane. J. Cell Sci., 110: 2129-2140.
22. A. Pyrpasopoulou, J. Meier, C. Maison, G. Simos and **S. D. Georgatos** (1996): The lamin B receptor (LBR) provides essential chromatin-docking sites at the nuclear envelope. EMBO J., 15:7108-7119.
23. G. Simos, C. Maison and **S. D. Georgatos** (1996): Characterization of p18, a component of the lamin B receptor complex and a new integral membrane protein of the avian erythrocyte nuclear envelope. J. Biol. Chem., 271: 12617-12625.
24. E. Nikolakaki, G. Simos, **S. D. Georgatos** and T. Giannakouros (1996): A nuclear envelope-associated kinase phosphorylates arginine-serine motifs and modulates interactions between the lamin B receptor and other nuclear proteins. J. Biol. Chem., 271: 8365-8372.
25. C. Maison, A. Pyrpasopoulou and **S. D. Georgatos** (1995). Vimentin-associated mitotic vesicles capture chromosomes in a lamin B and phosphorylation-dependent manner. EMBO J. 14: 3311-3324.
26. **S.D. Georgatos**, J. Meier and G. Simos (1994): Lamins and lamin-associated proteins. Curr. Opin. Cell Biol., 6: 347-353 (invited review).
27. **S. D. Georgatos** (1994): Towards an understanding of nuclear morphogenesis.

J. Cell. Biochem. 55: 69-76 (invited review).

28. G. Simos and **S. D. Georgatos** (1994): The lamin B receptor-associated protein p34 shares sequence homology and antigenic determinants with the splicing factor 2-associated protein p32. FEBS Lett., 346: 225-228.
29. J. Meier and **S. D. Georgatos** (1994): Type B lamins remain associated with the integral nuclear envelope protein p58 during mitosis: implications for nuclear reassembly. EMBO J., 13: 1888-1898.
30. P. D. Kouklis, A. Merdes, T. Papamarcaki and **S. D. Georgatos** (1993): Transient arrest of 3T3 cells in mitosis and inhibition of nuclear lamin reassembly around chromatin induced by anti-vimentin antibodies. Eur. J. Cell Biol., 62: 224-236.
31. C. Maison, H. Horstmann and **S. D. Georgatos** (1993): Regulated docking of nuclear membrane vesicles to vimentin filaments during mitosis. J. Cell Biol., 123: 1491-1505.

32. **S. D. Georgatos** (1993): Anti-idiotypic antibodies: methods, applications and critique. Methods in Cell Biology, 37: 407-440 (invited review) (Academic Press, D. Asai editor).
33. G. Simos and **S. D. Georgatos** (1992): The inner nuclear membrane protein p58 is in vivo associated with a p58-kinase and the nuclear lamins. EMBO J., 11: 4027-4036.
34. J. Yuan, G. Simos, G. Blobel and **S. D. Georgatos** (1991): Binding of lamin A to polynucleosomes. J. Biol. Chem. 266: 9211-9215.
35. K. D. Radsak, K. H. Brucher and **S. D. Georgatos** (1991): Focal nuclear envelope lesions and specific nuclear lamin A/C dephosphorylation during infection with human cytomegalovirus. Eur. J. Cell Biol. 54: 299-304.
36. J. Appelbaum, G. Blobel and **S. D. Georgatos** (1990): In vivo phosphorylation of the lamin B receptor. J. Biol. Chem. 265: 4181-4184.
37. **S. D. Georgatos**, I. Maroulakou and G. Blobel (1989): Lamin A, lamin B, and lamin B receptor analogues in Yeast. J. Cell Biol. 108: 2069-2082.
38. H. J. Worman, J. Yuan, G. Blobel and **S. D. Georgatos** (1988): A lamin B receptor in the nuclear envelope. PNAS 85: 8531-8534.
39. H.J. Worman, I. Lazaridis and **S. D. Georgatos** (1988): Nuclear lamina heterogeneity in mammalian cells. J. Biol. Chem. 263: 12135-12141.
40. **S. D. Georgatos**, C. Stournaras and G. Blobel (1988): Heterotypic and homotypic associations between the nuclear lamins: site-specificity and control by phosphorylation. PNAS 85: 4325-4329.

ΔΟΜΗ, ΣΥΓΚΡΟΤΗΣΗ ΚΑΙ ΑΛΛΗΛΕΠΙΔΡΑΣΕΙΣ ΤΩΝ ΕΝΔΙΑΜΕΣΩΝ ΙΝΙΔΙΩΝ

41. F. Gounari, N. Karagianni, A. Mincheva, P. Lichter, **S. D. Georgatos** and V. Schirrmacher (1997): The mouse filensin gene: structure and relation to other intermediate filament genes. FEBS Lett., 413: 371-378.
42. **S. D. Georgatos**, F. Gounari, G. Goulielmos and U. Aebi (1997): To bead or not to bead? Lens-specific intermediate filaments revisited. J. Cell Sci., 110: 2629-2634 (review).
43. G. Goulielmos, F. Gounari, S. Remington, S. Mueller, M. Haener, U. Aebi and **S. D. Georgatos** (1996): Filensin and phakinin form a novel type of beaded intermediate filaments and co-assemble de novo in cultured cells. J. Cell Biol., 132: 643-655.
44. G. Goulielmos, S. Remington, F. Schwesinger, **S. D. Georgatos** and F. Gounari (1996): Contribution of the structural domains of filensin in polymer formation and filament distribution.

J. Cell Sci., 109: 447-455.

45. **S. D. Georgatos** and C. Maison (1996): Integration of intermediate filaments into cellular organelles. Int. Rev. Cytol. 164: 91-123 (invited review).

46. **S. D. Georgatos**, F. Gounari and S. Remington (1994): The beaded intermediate filaments and their potential functions in the eye lens. BioEssays, 6: 413-418 (invited review).
47. F. Gounari, A. Merdes, R. Quinlan, J. Hess, P. G. FitzGerald, C. Ouzounis and **S. D. Georgatos** (1993): Bovine filensin possesses primary and secondary structure similarity to intermediate filament proteins J. Cell Biol., 121: 847-853.
48. A. Merdes, F. Gounari and **S. D. Georgatos** (1993): The 47kDa lens-specific protein phakinin is a tailless intermediate filament protein and an assembly partner of filensin. J. Cell Biol., 123: 1507-1516.
49. P. D. Kouklis, M. Hatzfeld, M. Brunkener, K. Weber and **S. D. Georgatos** (1993): In vitro assembly properties of vimentin mutagenized at the β -site tail motif. J. Cell Sci., 106: 919-928.
50. K. Djabali, A. Zissopoulou, M. J. de Hoop, **S. D. Georgatos** and C. G. Dotti (1993): Peripherin expression in hippocampal neurons induced by muscle soluble factors. J. Cell Biol., 123: 1197-1206.
51. **S. D. Georgatos** (1993): Dynamics of intermediate filaments: recent progress and unanswered questions. FEBS Lett. 318: 101-107 (review).
52. P. D. Kouklis, P Traub and **S. D. Georgatos** (1992): Involvement of the consensus sequence motif at coil 2b in the assembly and stability of vimentin intermediate filaments. J. Cell Sci., 102: 31-41.
53. M. Brunkener and **S. D. Georgatos** (1992): Membrane-binding properties of filensin, a cytoskeletal protein of the lens fiber cells. J. Cell Sci., 103: 709-718.
54. T. Papamarcaki, P. D. Kouklis, T. E. Kreis and **S. D. Georgatos** (1991): The "lamin B-fold". J. Biol. Chem. 266: 21247-21251.
55. K. Djabali, M-M. Portier, F. Gros, G. Blobel and **S.D. Georgatos** (1991): Network antibodies identify nuclear lamin B as a physiological attachment site for peripherin intermediate filaments. Cell 64: 109-121.
56. P. D. Kouklis, T. Papamarcaki, A. Merdes and **S. D. Georgatos** (1991): A potential role of the COOH-terminal domain in the lateral packing of type III intermediate filaments. J. Cell Biol. 114: 773-786.
57. A. Merdes, M. Brunkener, H. Horstmann and **S. D. Georgatos** (1991): Filensin: a new vimentin-binding, polymerization-competent and membrane-associated protein of the lens fiber cell. J. Cell Biol. 115: 397-410.
58. **S. D. Georgatos** and G. Blobel (1987): Two distinct attachment sites for vimentin along the plasma membrane and the nuclear envelope in avian erythrocytes: a basis for a vectorial assembly of intermediate filaments. J. Cell Biol. 105: 105-115.
59. **S. D. Georgatos**, K. Weber, N. Geisler and G. Blobel (1987): Binding of two desmin derivatives to the plasma membrane and the nuclear envelope of avian erythrocytes: evidence for a conserved site-specificity in intermediate filament-membrane interactions. PNAS 84: 6780-6784.
60. **S. D. Georgatos** and G. Blobel (1987): Lamin B constitutes an intermediate filament attachment site at the nuclear envelope. J. Cell Biol. 105: 117-125.

61. **S. D. Georgatos** (1987): Current approaches to study receptors of biological substances. Iatriki 51: 141-149 (review).
62. **S. D. Georgatos**, D.C. Weaver and V.T. Marchesi (1985): Site-specificity in vimentin-membrane interactions: intermediate filament subunits associate with the plasma membrane via their head domains. J. Cell Biol. 100: 1962-1967.
63. **S. D. Georgatos** and V.T. Marchesi (1985): The binding of vimentin to human erythrocyte membranes: a model system for the study of intermediate filament-membrane interactions. J. Cell Biol. 100: 1955-1961.
64. **S. D. Georgatos** (1984): The red cell membrane-skeleton. Iatriki 45: 8-13 (review).

Book Chapters

65. **S. D. Georgatos** and P. A. Theodoropoulos (2001): Taxol. In *Cancer Research Encyclopedia*, Springer-Verlag.

Textbooks

- S. D. Georgatos**, P. Kouklis, I. Lazarides, A. Melidoni (2008): Stem Cells (in Greek). EFYRA, Ioannina.