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Niki Chondrogianni is a biologist. She obtained her PhD in Biochemistry and Molecular Biology from the University of Athens in Greece while she was a short-term visitor at the University Denis Diderot - Paris 7 in France and at the University of Bristol in UK. She conducted her post-doctoral studies at the National Hellenic Research Foundation in Athens. During her post-doc, she was also trained in the use of the model organism *C. elegans* at the Foundation of Research and Technology-Hellas, Institute of Molecular Biology and Biotechnology in Greece. She became Research Assistant Professor at the National Hellenic Research Foundation in 2009 and since 2013 she is Research Associate Professor. She is currently under evaluation to become a Director of Research.

Chondrogianni focuses on the genetic and environmental factors that govern ageing, longevity and age-related diseases with emphasis on the regulation of the proteasome. She is interested in revealing proteasome regulation in terms of expression but also function. She is seeking for natural or chemically-synthesized compounds that may act as proteasome activators and thus may serve as anti-ageing agents. She is equally interested in identifying compounds that can decelerate the progression of various proteinopathies with emphasis on Alzheimer's disease using *C. elegans* as a model in combination with human cells of neuronal origin and murine primary neurons. She is a national and international patent holder that resulted in the development of novel anti-ageing products that act through activation of the proteasome system (two relative product series are currently in the national and international market).

Publications

1. Aktypi F., Papaevgeniou N., Voutetakis C., Chatziioannou A., Grune T., **Chondrogianni N.** (2021) Network analysis in aged *C. elegans* reveals candidate regulatory genes of ageing. *Biogerontology* *in press*
2. Magoulas GE., Kalopetridou L., Ćirić A., Kritsi E., Kouka P., Zoumpoulakis P., **Chondrogianni N.**, Soković M., Prousis KC., Calogeropoulou T. (2020) Synthesis, biological evaluation and QSAR studies of new thieno[2,3-d]pyrimidin-4(3H)-one derivatives as antimicrobial and antifungal agents. *Bioorganic Chem.* 104509 *in press*
3. Sacramento Kelmer E., Kirkpatrick J.M., Mazzetto M., Baumgart M., Bartolome A., Di Sanzo S., Caterino C., Sanguanini M., Papaevgeniou N., Lefaki M., Childs D., Bagnoli S., Terzibaszi Tozzini E., Di Fraia D., Romanov N., Sudmant P., Huber W., **Chondrogianni N.**, Vendruscolo M., Cellerino A. and Ori A. (2020) Reduced proteasome activity in the aging brain results in ribosome stoichiometry loss and aggregation. *Mol. Syst Biol* 16(6):e9596. (**cover page**)
4. Laidou S., Alanis-Lobato G., Pribyl J., Raskó T., Tichy B., Mikulasek K., Tsagiopoulou M., Oppelt J., Kastrinaki G., Lefaki M., Singh M., Zink A., **Chondrogianni N.**, Psomopoulos F., Prigione A., Ivics Z., Pospisilova S., Skladal P., Izsvák Z., Andrade-Navarro M.A., Petrakis S. (2020) Nuclear inclusions of pathogenic ataxin-1 induce oxidative stress and perturb the protein synthesis machinery. *Redox Biology* 32: 101458.
5. Binenbaum I., Lefaki M., **Chondrogianni N.***, Chatziioannou A. (2020) Bioinformatic framework for analysis of transcription factor changes as the molecular link between replicative cellular senescence signaling pathways and carcinogenesis. *Biogerontology* 21: 357-366. (*** co-corresponding author**)
6. Papaevgeniou N., Hoehn A., Tur J.A., Klotz L.O., Grune T., **Chondrogianni N.** (2019) Sugar-derived AGEs accelerate pharyngeal pumping rate and increase the lifespan of *Caenorhabditis elegans*. *Free Radic Res.* 13: 1-12.
7. Lefaki M., Papaevgeniou N., Tur J.A., Vorgias C.E., Sykiotis G.P., **Chondrogianni N.** (2019) The dietary triterpenoid 18 α -Glycyrrhetic acid protects from MMC-induced genotoxicity through the ERK/Nrf2 pathway. *Redox Biol.* 28: 101317.

8. Delivoria D.C., Chia S., Habchi J., Perni M., Matis I., Papaevgeniou N., Reczko M., **Chondrogianni N.**, Dobson C.M., Vendruscolo M., Skretas G. (2019) Bacterial production and direct functional screening of expanded molecular libraries for discovering inhibitors of protein aggregation. *Sci Adv.* 5(10): eaax5108.
9. Sakellari M., **Chondrogianni N.***, Gonos E.S. (2019) Protein synthesis inhibition induces proteasome assembly and function. *Biochem Biophys Res Commun.* 514: 224-230. (*** co-corresponding author**)
10. Draganidis D., Jamurtas A.Z., Stampoulis T., Laschou V., Deli C.K., Georgakouli K., Papanikolaou K., Chatzinikolaou A., Michalopoulou M., Papadopoulos C., Tsimeas P., **Chondrogianni N.**, Koutedakis Y., Karagounis L.G. and Fatouros I.G. (2018) Disparate habitual physical activity and dietary intake profiles of elderly men with low and elevated systemic inflammation. *Nutrients* 10 (5), pii: E566.
11. Athanasopoulou S., **Chondrogianni N.**, Santoro A., Asimaki K., Delitsikou V., Voutetakis K., Fabbri C., Pietruszka B., Kaluza J., Franceschi C., Gonos E.S. (2018) Beneficial effects of elderly tailored Mediterranean diet on the proteasomal proteolysis. *Front. Physiol.* 9: 457.
12. Matis I., Delivoria D.C., Mavroidi B., Papaevgeniou N., Panoutsou S., Bellou S., Papavasileiou K.D., Linardaki Z.I., Stavropoulou A.V., Vekrellis K., Boukos N., Kolisis F.N., Gonos E.S., Margarity M., Papadopoulos M.G., Efthimiopoulos S., Pelecanou M., **Chondrogianni N.**, Skretas G. (2017) An integrated bacterial system for the discovery of chemical rescuers of disease-associated protein misfolding. *Nature Biomed. Eng.* 1: 838–852.
13. Draganidis D., **Chondrogianni N.**, Chatzinikolaou A., Terzis G., Karagounis L.G., Sovatzidis A., Avloniti A., Lefaki M., Protopappa M., Deli C.K., Papanikolaou K., Jamurtas A.Z., Fatouros I.G. (2017) Protein ingestion preserves proteasome activity during intense aseptic inflammation and facilitates skeletal muscle recovery in humans. *Br. J. Nutr.* 118: 189-200.
14. Filippopoulou K., Papaevgeniou N., Lefaki M., Paraskevopoulou A., Biedermann D, Kren V. and **Chondrogianni N.** (2017) 2,3-Dehydrosilybin A/B as a pro-longevity and anti-aggregation compound. *Free Rad. Biol. Med.* 103:256-267.
15. Kapetanou M., **Chondrogianni N.***, Petrakis S., Koliakos G. and Efstathios S. Gonos (2017) Proteasome activation enhances stemness and lifespan of human mesenchymal stem cells. *Free Rad. Biol. Med.* 103:226-235. (*** co-corresponding author**)
16. Papaevgeniou N., Sakellari M., Jha S., Tavernarakis N., Holmberg C.I., Gonos E.S and **Chondrogianni N.** (2016) 18 α - glycyrrhetic acid proteasome activator decelerates aging and Alzheimer's disease progression in *C. elegans* and neuronal cultures. *Antiox. Redox Signal.* 25: 855-869. (**cover page**)
17. **Chondrogianni N.***, Georgila K., Kourtis N., Tavernarakis N., Gonos E.S. (2015) 20S proteasome activation promotes life span extension and resistance to proteotoxicity in *Caenorhabditis elegans*. *FASEB J* 29: 611-622. (*** co-corresponding author**)
18. Koufaki M*, Fotopoulou T., Kapetanou M., Heropoulos GA*, Gonos E.S, **Chondrogianni N***. (2014) Microwave-assisted synthesis of 3,5-disubstituted isoxazoles and evaluation of their anti-ageing activity. *Eur. J. Med. Chem.* 83: 508-515. (*** equal contribution**)
19. Tsolou A., Nelson G.; Trachana V., **Chondrogianni N.**, Saretzki G., von Zglinicki T.; Gonos E.S. (2012) The 19S proteasome subunit Rpn7 stabilizes DNA damage foci upon genotoxic insult. *IUBMB Life* 64: 432-442.
20. Graikou K., Kapeta S., Aligiannis N., Sotiroidis G., **Chondrogianni N.**, Gonos E.S. and Chinou I. (2011) Chemical Analysis of Greek Pollen - Antioxidant, antimicrobial and proteasome activation properties. *Chem Cent J.* 5: 33.
21. **Chondrogianni N.***, Kapeta S., Chinou I., Vassilatou K., Papassideri I. and Gonos E.S. (2010) Anti-ageing and rejuvenating effects of quercetin. *Exp. Gerontol.* 45: 763-771. (*** co-corresponding author**)
22. Kapeta S., **Chondrogianni N.*** and Gonos E.S. (2010) Nrf2 mediated proteasome activation delays senescence in human fibroblasts. *J. Biol. Chem.* 285: 8171-8184. (*** co-corresponding author**)
23. Trougakos I.P., **Chondrogianni N.**, Amarantos I., Blake J., Schwager C., Ansorge W. and Gonos E.S. (2010) Genome-wide transcriptome profile of the human osteosarcoma Sa OS and U-2 OS cell lines. *Cancer Genet Cytogenet.* 196: 109-118.
24. Catalgol B., Ziaja I., Breusing N., Jung T., Hoehn A., Alpertunga B., Schroeder P., **Chondrogianni N.**, Gonos E.S., Petropoulos I., Friguet B., Klotz L.O., Krutmann J. and Grune T. (2009) The proteasome is an integral part of solar ultraviolet a radiation-induced gene expression. *J. Biol. Chem.* 284: 30076-30086.

25. Balantinou E., Trougakos I.P., **Chondrogianni N.**, Margaritis L.H. and Gonos E.S. (2009) Transcriptional and post-translational regulation of clusterin by the two main cellular proteolytic pathways. *Free Rad. Biol. Med.* 46:1267-1274.
26. **Chondrogianni N.**, Trougakos I.P., Kletsas D., Chen Q.M. and Gonos E.S. (2008) Partial proteasome inhibition in human fibroblasts triggers accelerated M1 senescence or M2 crisis depending on p53 and Rb status. *Aging Cell*, 7: 717-732. (**journal's highlight**)
27. Poullos E., Trougakos I.P., **Chondrogianni N.** and Gonos E.S. (2007) Exposure of human diploid fibroblasts to hypoxia extends proliferative lifespan. *Ann. N. Y. Acad. Sci.* 1119: 9-19.
28. **Chondrogianni N.** and Gonos E.S. (2007) Overexpression of hUMP1/POMP proteasome accessory protein enhances proteasome-mediated antioxidant defence. *Exp. Gerontol.* 42: 899-903.
29. Katsiki M., **Chondrogianni N.**, Chinou I., Rivett A.J., and Gonos E.S. (2007) The olive constituent oleuropein exhibits proteasome stimulatory properties in vitro and confers lifespan extension of human embryonic fibroblasts. *Rejuvenation Res.* 10: 157-172.
30. Stratford F.L., **Chondrogianni N.**, Trougakos I.P., Gonos E.S. and Rivett A.J. (2006) Proteasome response to interferon-gamma is altered in senescent human fibroblasts. *FEBS Lett.* 580: 3989-3994.
31. **Chondrogianni N.**, Tzavelas C., Pemberton A.J., Nezis I.P., Rivett A.J. and Gonos E.S. (2005) Overexpression of proteasome beta 5 subunit increases the amount of assembled proteasome and confers ameliorated response to oxidative stress and higher survival rates. *J. Biol.Chem.* 280: 11840-11850.
32. **Chondrogianni N.**, Simoes D.C.M., Francheschi C. and Gonos E.S. (2004) Cloning of differentially expressed genes in skin fibroblasts from centenarians. *Biogerontology* 5: 401-409.
33. Katsiki M., Trougakos I.P., **Chondrogianni N.**, Alexopoulos E.C., Makropoulos V. and Gonos E.S. (2004) Alterations of senescence biomarkers in human cells by exposure to CrVI in vivo and in vitro. *Exp. Gerontol.* 39: 1079-1087.
34. **Chondrogianni N.** and Gonos E.S. (2004) Proteasome inhibition induces a senescence-like phenotype in primary human fibroblasts cultures. *Biogerontology* 5: 55-61.
35. **Chondrogianni N.**, Stratford F.L.L., Trougakos I.P., Friguet B., Rivett A.J. and Gonos E.S. (2003) Central role of the proteasome in senescence and survival of human fibroblasts: induction of a senescence-like phenotype upon its inhibition and resistance to stress upon its activation. *J. Biol. Chem.* 278: 28026–28037.
36. Agiostratidou G., Sgouros I., Galani A., Voulgari A., **Chondrogianni N.**, Samantas E., Demopoulos M.A., Skarlos D. and Gonos E.S. (2001) Correlation of *in vitro* cytotoxicity and clinical response to therapy in ovarian and breast cancer patients. *Anticancer Res.* 21: 455-459.
37. **Chondrogianni N.**, Petropoulos I., Franceschi C., Friguet B., and Gonos E.S. (2000) Fibroblast cultures from healthy centenarians have an active proteasome. *Exp. Gerontol.* 35: 721-728.

Reviews

1. Lagoumtzi S. and **Chondrogianni N.** (2021) Senolytics and Senomorphics: natural and synthetic therapeutics in the treatment of aging and chronic diseases. *Free Radical Biol. Med.* *in press*
2. Vasilopoulou MA., Ioannou E., Roussis V. and **Chondrogianni N.** (2021) Modulation of the ubiquitin-proteasome system by marine natural products. *Redox Biol.* 41:101897.
3. Gioran A. and **Chondrogianni N.** (2020) Mitochondria (cross)talk with proteostatic mechanisms; focusing on ageing and neurodegenerative diseases. *Mech. Ageing. Dev.* 190:111324.
4. Panagiotidou E. and **Chondrogianni N.** (2020) We are what we eat: ubiquitin-proteasome system (UPS) modulation through dietary products. *Adv. Exp. Med. Biol.* 1233: 329-348.
5. Paunkov A., Chartoumpakis DV., Ziros PG., **Chondrogianni N.**, Kensler TW., Sykiotis GP. (2019) Impact of Antioxidant Natural Compounds on the Thyroid Gland and Implication of the Keap1/Nrf2 Signaling Pathway. *Curr Pharm Des.*, 25: 1828-1846.
6. Santín-Márquez R., Alarcón-Aguilar A., López-Diazguerrero N.E., **Chondrogianni N.**, Königsberg M. (2019) Sulforaphane - role in aging and neurodegeneration. *Geroscience*, 41: 655-670.
7. Papaevgeniou N. and **Chondrogianni N.** (2018) Identification of anti-aging and anti-aggregation polyphenolic compounds using *C. elegans* as a model organism. *Curr Pharm Des.* 24: 2107-2120.
8. Lefaki M., Papaevgeniou N. and **Chondrogianni N.** (2017) Redox regulation of proteasome function. *Redox Biology* 13: 452-458.

9. Egea J, Fabregat I, Frapart YM, Ghezzi P, Görlach A, Kietzmann T, Kubaichuk K, Knaus UG, Lopez MG, Olaso-Gonzalez G, Petry A, Schulz R, Vina J, Winyard P, Abbas K, Ademowo OS, Afonso CB, Andreadou I, Antelmann H, Antunes F, Aslan M, Bachschmid MM, Barbosa RM, Belousov V, Berndt C, Bernlohr D, Bertrán E, Bindoli A, Bottari SP, Brito PM, Carrara G, Casas AI, Chatzi A, **Chondrogianni N**, Conrad M, Cooke MS, Costa JG, Cuadrado A, My-Chan Dang P, De Smet B, Debelec-Butuner B, Dias IHK, Dunn JD, Edson AJ, El Assar M, El-Benna J, Ferdinandy P, Fernandes AS, Fladmark KE, Förstermann U, Giniatullin R, Giricz Z, Görbe A, Griffiths H, Hampl V, Hanf A, Herget J, Hernansanz-Agustín P, Hillion M, Huang J, Ilikay S, Jansen-Dürr P, Jaquet V, Joles JA, Kalyanaraman B, Kaminskyy D, Karbaschi M, Kleanthous M, Klotz LO, Korac B, Korkmaz KS, Koziel R, Kračun D, Krause KH, Křen V, Krieg T, Laranjinha J, Lazou A, Li H, Martínez-Ruiz A, Matsui R, McBean GJ, Meredith SP, Messens J, Miguel V, Mikhed Y, Milisav I, Milković L, Miranda-Vizuete A, Mojović M, Monsalve M, Mouthuy PA, Mulvey J, Münzel T, Muzykantov V, Nguyen ITN, Oelze M, Oliveira NG, Palmeira CM, Papaevgeniou N, Pavićević A, Pedre B, Peyrot F, Phylactides M, Pircalabioru GG, Pitt AR, Poulsen HE, Prieto I, Rigobello MP, Robledinos-Antón N, Rodríguez-Mañas L, Rolo AP, Rousset F, Ruskovska T, Saraiva N, Sasson S, Schröder K, Semen K, Seredenina T, Shakirzyanova A, Smith GL, Soldati T, Sousa BC, Spickett CM, Stancic A, Stasia MJ, Steinbrenner H, Stepanić V, Steven S, Tokatlidis K, Tuncay E, Turan B, Ursini F, Vacek J, Vajnerova O, Valentová K, Van Breusegem F, Varisli L, Veal EA, Yalçın AS, Yelisseyeva O, Žarković N, Zatloukalová M, Zielonka J, Touyz RM, Papapetropoulos A, Grune T, Lamas S, Schmidt HHHW, Di Lisa F, Daiber A. (2017) European contribution to the study of ROS: A summary of the findings and prospects for the future from the COST action BM1203 (EU-ROS). *Redox Biol.* 13: 94-162.
10. **Chondrogianni N.**, Voutetakis K., Kapetanou M., Delitsikou V., Papaevgeniou N., Sakellari M., Lefaki M., Filippopoulou K. and Gonos E.S. (2015) Proteasome activation: An innovative promising approach for delaying aging and retarding age-related diseases. *Ageing Res. Rev.* 23 (Pt A): 37-55. (**co-corresponding author**)
11. **Chondrogianni N.**, Sakellari M., Lefaki M., Papaevgeniou N., Gonos E.S. (2014) Proteasome activation delays aging *in vitro* and *in vivo*. *Free Rad. Biol. Med.* 71: 303-320. (**corresponding author**)
12. Papaevgeniou N., **Chondrogianni N.** (2014) The ubiquitin proteasome system in *Caenorhabditis elegans* and its regulation. *Redox Biol.* 2: 333-347.
13. **Chondrogianni N.**, Petropoulos I., Grimm S., Georgila K., Catalgol B., Friguet B., Grune T., Gonos E.S. (2014) Protein damage, repair and proteolysis. *Mol. Aspects Med.* 35: 1-71. (**co-corresponding author**)
14. Aldini G, Vistoli G, Stefek M, **Chondrogianni N**, Grune T, Sereikaite J, Sadowska-Bartosz I, Bartosz G. (2013) Molecular strategies to prevent, inhibit and degrade advanced glycoxidation and advanced lipoxidation end products. *Free Radic Res.* 47 Suppl 1:93-137.
15. **Chondrogianni N.** and Gonos E.S. (2010) Proteasome function determines cellular homeostasis and the rate of aging. *Adv. Exp. Med. Biol.* 694: 38-46.
16. **Chondrogianni N.** and Gonos E.S. (2008) Proteasome activation as a novel anti-aging strategy. *IUBMB Life* 60: 651-655.
17. **Chondrogianni N.** and Gonos E.S. (2005) Proteasome dysfunction and mammalian aging: involved steps and factors. *Exp. Gerontol.* 40: 931-938.
18. **Chondrogianni N.**, Fragoulis E.S. and Gonos E.S. (2002) Protein degradation during aging: the lysosome-, the calpain- and the proteasome-dependent cellular proteolytic systems. *Biogerontology* 3: 121-123.
19. Friguet B., Bulteau A-L., **Chondrogianni N.**, Conconi M. and Petropoulos I. (2000) Protein degradation by the proteasome and its implication in ageing. *Ann. N. Y. Acad. Sci.* 908: 143-154.
20. Petropoulou C., **Chondrogianni N.**, Simoes D., Agiostratidou G., Drosopoulos N., Kotsota V. and Gonos E.S. (2000) Ageing and longevity: A paradigm of complementation between genetic control and failure of homeostasis? *Ann. N. Y. Acad. Sci.* 908: 133-142.

Chapters in books

1. Vasilopoulou M.A, Papaevgeniou N. and **Chondrogianni N.** (2021) Proteasome fate in aging and proteinopathies. In **Chondrogianni N.**, Pick E. and Gioran A (Eds) *Proteostasis and Proteolysis: A volume in the Oxidative Stress and Disease book series*, CRC Press, Taylor & Francis Group.

2. Ranti D., Gioran A. and **Chondrogianni N.** (2021) Autophagy in aging and oxidative stress. In **Chondrogianni N.**, Pick E. and Gioran A (Eds) Proteostasis and Proteolysis: A volume in the Oxidative Stress and Disease book series, CRC Press, Taylor & Francis Group.
3. **Chondrogianni N.**, Vasilopoulou M.A., Kapetanou M., Gonos E.S. (2020) Proteasome Modulation: A Way to Delay Aging? In: Rattan, S.I.S. (Ed.), Encyclopedia of Biomedical Gerontology. Elsevier. vol. 3, Academic Press, pp. 92–104.
4. Papaevgeniou N. and **Chondrogianni N.** (2016) UPS activation in the battle against aging and aggregation-related diseases: An extended review. In: Rune Matthiesen (ed.), Proteostasis: Methods and Protocols, Methods in Molecular Biology, vol. 1449, pp.1-70 Springer Science+Business Media New York, USA
5. **Chondrogianni N.** and Gonos E.S. (2012) The Proteasomal System in Aging and Disease: Structure and Function of the Ubiquitin-Proteasome System: Modulation of components. In Grune's Progress in Molecular Biology and Translational Science (M. Conn, ed.) vol. 109, pp. 41–74 Elsevier, USA.
6. Gonos E.S. Trougakos I.P., and **Chondrogianni N.** (2008) Aging Research in Greece. In: Palmore, E., Whittington, F. and Kunkel, S. (eds): The International Handbook of Aging: current research and development. pp 249-257, Praeger Publishers, Connecticut, USA.
7. **Chondrogianni N.**, Chinou I. and Gonos E.S. (2008) Anti-aging properties of the olive constituent oleuropein in human cells. In: V.R. Preedy and R.R. Watson (eds): Olives and olive oil in Health and Disease Prevention. Oxford: Academic Press, 2010, pp. 1335-1343.
8. Trougakos I.P., **Chondrogianni N.**, Pimenidou A., Katsiki M., Tzavelas C. and Gonos E.S. (2003) Slowing down cellular ageing *in vitro*. S.I.S. Rattan (ed): Modulating Aging and Longevity 65-83 Kluwer Academic Publishers.