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## Short presentation

Leading the Melanoma Research Team at the **Danish Cancer Society Research Center**, I am mainly focused on the biological mechanisms of melanoma development and immune responses to explore novel treatment strategies in preclinical models. My group is translational research oriented. We apply cell and molecular biology-based techniques, alongside *in vivo* approaches, to dissect the molecular mechanisms underlying melanoma resistance to therapy (both targeted-and immuno-therapy).

## Employment

### Associate Professor

Department of Drug Design and Pharmacology

København Ø

1 Dec 2021 → nu

### Associate Professor

Associate Professor

Molecular and Cellular Pharmacology

København Ø

1 Dec 2021 → 31 Jul 2023

### Senior Scientist

Danish Cancer Society

Copenhagen, Denmark

1 Jul 2017 → nu

## Research outputs

### **AMBRA1 phosphorylation by CDK1 and PLK1 regulates mitotic spindle orientation**

Faienza, F., Polverino, F., Rajendraprasad, G., Milletti, G., Hu, Z., Colella, B., Gargano, D., Strappazon, F., Rizza, S., Vistesén, M. V., Luo, Y., Antonioli, M., Cianfanelli, V., Ferraina, C., Fimia, G. M., Filomeni, G., De Zio, D., Dengjel, J., Barisic, M., Guarguaglini, G. & 2 others, Di Bartolomeo, S. & Cecconi, F., 2023, In: Cellular and Molecular Life Sciences. 80, 9, 251.

### **Ambra1 modulates the tumor immune microenvironment and response to PD-1 blockade in melanoma**

Frias, A., Di Leo, L., Antoranz, A., Nazerai, L., Carretta, M., Bodemeyer, V., Pagliuca, C., Dahl, C., Claps, G., Mandelli, G. E., Andhari, M. D., Pacheco, M. P., Sauter, T., Robert, C., Guldberg, P., Madsen, Daniel Hargbøl, Cecconi, F., Bosisio, F. M. & de Zio, Daniela, 2023, In: Journal for ImmunoTherapy of Cancer. 11, 3, 15 p., e006389.

### **GSNOR deficiency promotes tumor growth via FAK1 S-nitrosylation**

Rizza, S., Di Leo, L., Pecorari, C., Giglio, P., Faienza, F., Montagna, C., Maiani, E., Puglia, M., Bosisio, F. M., Petersen, T. S., Lin, L., Rissler, V., Vilorio, J. S., Luo, Y., Papaleo, E., de Zio, Daniela, Blagoev, B. & Filomeni, G., 2023, In: Cell Reports. 42, 1, 25 p., 111997.

### **Metabolic modelling-based in silico drug target prediction identifies six novel repurposable drugs for melanoma**

Bintener, T., Pacheco, M. P., Philippidou, D., Margue, C., Kishk, A., Del Mistro, G., Di Leo, L., Moscardó Garcia, M., Halder, R., Sinkkonen, L., de Zio, Daniela, Kreis, S., Kulms, D. & Sauter, T., 2023, In: Cell Death and Disease. 14, 7, 13 p., 468.

### **Thiopurine 6TG treatment increases tumor immunogenicity and response to immune checkpoint blockade**

Nazerai, L., Willis, S. C., Yankilevich, P., Di Leo, L., Bosisio, F. M., Frias, A., Bertolotto, C., Nersting, J., Thastrup, M., Buus, Søren, Thomsen, Allan Randrup, Nielsen, M., Rohrberg, K. S., Schmiegelow, Kjeld & de Zio, Daniela, 2023, In: Oncoimmunology. 12, 1, 16 p., 2158610.

### **New Insights into the Phenotype Switching of Melanoma**

Pagliuca, C., Leo, L. D. & de Zio, Daniela, 12 Dec 2022, In: Cancers. 14, 24, 17 p., 6118.

### **The *Cancermuts* software package for the prioritization of missense cancer variants: a case study of *AMBRA1* in melanoma**

Tiberti, M., Di Leo, L., Vistesen, M. V., Kuhre, R. S., Cecconi, F., de Zio, Daniela & Papaleo, E., 2022, In: Cell Death & Disease. 13, 10, 12 p., 872.

### ***AMBRA1* and FAK1: crosstalk for improved targeted therapy in melanoma**

Leo, L. D. & de Zio, Daniela, 2021, In: Molecular & Cellular Oncology. 8, 4

### ***AMBRA1* has an impact on melanoma development beyond autophagy**

Di Leo, L. & de Zio, Daniela, 2021, In: Autophagy. 17, 7, p. 1802-1803

### ***AMBRA1* regulates cyclin D to guard S-phase entry and genomic integrity**

Maiani, E., Milletti, G., Nazio, F., Holdgaard, S. G., Bartkova, J., Rizza, S., Cianfanelli, V., Lorente, M., Simoneschi, D., Di Marco, M., D'Acunzo, P., Di Leo, L., Rasmussen, R., Montagna, C., Raciti, M., De Stefanis, C., Gabicagogeasoa, E., Rona, G., Salvador, N., Pupo, E. & 26 others, Merchut-Maya, J. M., Daniel, C. J., Carinci, M., Cesarini, V., O'sullivan, A., Jeong, Y., Bordi, M., Russo, F., Campello, S., Gallo, A., Filomeni, G., Lanzetti, L., Sears, R. C., Hamerlik, P., Bartolazzi, A., Hynds, R. E., Pearce, D. R., Swanton, C., Pagano, M., Velasco, G., Papaleo, E., de Zio, Daniela, Maya-Mendoza, A., Locatelli, F., Bartek, J. & Cecconi, F., 2021, In: Nature. 592, p. 799-803

### **Loss of *Ambra1* promotes melanoma growth and invasion**

Di Leo, L., Bodemeyer, V., Bosisio, F. M., Claps, G., Carretta, M., Rizza, S., Faienza, F., Frias, A., Khan, S., Bordi, M., Pacheco, M. P., Di Martino, J., Bravo-Cordero, J. J., Daniel, C. J., Sears, R. C., Donia, M., Madsen, D. H., Guldborg, P., Filomeni, G., Sauter, T. & 3 others, Robert, C., de Zio, Daniela & Cecconi, F., 2021, In: Nature Communications. 12, 1, p. 2550-2550.

### **Mitophagy contributes to alpha-tocopheryl succinate toxicity in GSNOR-deficient hepatocellular carcinoma**

Rizza, S., Di Leo, L., Mandatori, Sara, de Zio, Daniela & Filomeni, G., 1 Jun 2020, In: Biochemical Pharmacology. 176, 12 p., 113885.

### **Altered Tregs Differentiation and Impaired Autophagy Correlate to Atherosclerotic Disease**

Mandatori, S., Pacella, I., Marzolla, V., Mammi, C., Starace, D., Padula, F., Vitiello, L., Armani, A., Savoia, C., Taurino, M., de Zio, Daniela, Giampietri, C., Piconese, S., Cecconi, F., Caprio, M. & Filippini, A., 2020, In: Frontiers in Immunology. 11, p. 350

### **The Complex Role of Autophagy in Melanoma Evolution: New Perspectives From Mouse Models**

Di Leo, L., Bodemeyer, V. & de Zio, Daniela, 2019, In: Frontiers in Oncology. 9, 9 p., 1506.

**S-nitrosylation drives cell senescence and aging in mammals by controlling mitochondrial dynamics and mitophagy**

Rizza, S., Cardaci, S., Montagna, C., Di Giacomo, G., de Zio, Daniela, Bordi, M., Maiani, E., Campello, S., Borreca, A., Puca, A. A., Stamler, J. S., Cecconi, F. & Filomeni, G., 2018, In: Proceedings of the National Academy of Sciences of the United States of America. 115, 15, p. E3388-E3397

**Autophagy and the cell cycle: A complex landscape**

Mathiassen, S. G., de Zio, Daniela & Cecconi, F., 2017, In: Frontiers in Oncology. 7, 16 p., 51.

**S-nitrosylation of the Mitochondrial Chaperone TRAP1 Sensitizes Hepatocellular Carcinoma Cells to Inhibitors of Succinate Dehydrogenase**

de Zio, Daniela, 2016, In: Cancer Research.

**Apaf1 in embryonic development-shaping life by death, and more**

de Zio, Daniela, Maiani, E. & Cecconi, F., 3 Sep 2015, In: International Journal of Developmental Biology. 59, 1-3, p. 33-39 7 p.

**Oxidative stress and autophagy: The clash between damage and metabolic needs**

Filomeni, G., de Zio, Daniela & Cecconi, F., Mar 2015, In: Cell Death and Differentiation. 22, 3, p. 377-388 12 p.

**AMBRA1 links autophagy to cell proliferation and tumorigenesis by promoting c-Myc dephosphorylation and degradation**

Fuoco, C., Lorente, M., Salazar, M., Quondamatteo, F., Gherardini, P. F., De Zio, D., Nazio, F., Antonioli, M., D'Orazio, M., Skobo, T., Bordi, M., Rohde, M., Dalla Valle, L., Helmer-Citterich, M., Gretzmeier, C., Dengjel, J., Fimia, G. M., Piacentini, M., Di Bartolomeo, S., Velasco, G. & 1 others, Cecconi, F., 1 Jan 2015, In: Nature Cell Biology. 17, 1, p. 20-30 11 p.

**Apoptosis and Autophagy face to face: Apaf1 and Ambra1 as a paradigm.**

de Zio, Daniela, 2015, "Cell Death 1994-2014", the ICDS 20th Anniversary ebook. .

**S-nitrosoglutathione reductase deficiency-induced S-nitrosylation results in neuromuscular dysfunction**

Montagna, C., Di Giacomo, G., Rizza, S., Cardaci, S., Ferraro, E., Grumati, P., de Zio, Daniela, Maiani, E., Muscoli, C., Lauro, F., Ilari, S., Bernardini, S., Cannata, S., Gargioli, C., Ciriolo, M. R., Cecconi, F., Bonaldo, P. & Filomeni, G., 1 Aug 2014, In: Antioxidants and Redox Signaling. 21, 4, p. 570-587 18 p.

**New insights into the link between DNA damage and apoptosis**

de Zio, Daniela, Cianfanelli, V. & Cecconi, F., 20 Aug 2013, In: Antioxidants and Redox Signaling. 19, 6, p. 559-571 13 p.

**Neuroprotection of kaempferol by autophagy in models of rotenone-mediated acute toxicity: Possible implications for Parkinson's disease**

Filomeni, G., Graziani, I., de Zio, Daniela, Dini, L., Centonze, D., Rotilio, G. & Ciriolo, M. R., Apr 2012, In: Neurobiology of Aging. 33, 4, p. 767-785 19 p.

**Oxidative DNA damage in neurons: Implication of Ku in neuronal homeostasis and survival**

de Zio, Daniela, Bordi, M. & Cecconi, F., 2012, In: International Journal of Cell Biology. 752420.

**Apaf1 plays a pro-survival role by regulating centrosome morphology and function**

Ferraro, E., Pesaresi, M. G., de Zio, Daniela, Cencioni, M. T., Gortat, A., Cozzolino, M., Berghella, L., Salvatore, A. M., Oettinghaus, B., Scorrano, L., Pérez-Paya, E. & Cecconi, F., Oct 2011, In: Journal of Cell Science. 124, 20, p. 3450-3463 14 p.

**The DNA repair complex Ku70/86 modulates Apaf1 expression upon DNA damage**

de Zio, Daniela, Bordi, M., Tino, E., Lanzuolo, C., Ferraro, E., Mora, E., Ciccocanti, F., Fimia, G. M., Orlando, V. & Cecconi, F., Mar 2011, In: Cell Death and Differentiation. 18, 3, p. 516-527 12 p.

**Caspase-3 triggers early synaptic dysfunction in a mouse model of Alzheimer's disease**

D'Amelio, M., Cavallucci, V., Middei, S., Marchetti, C., Pacioni, S., Ferri, A., Diamantini, A., de Zio, Daniela, Carrara, P., Battistini, L., Moreno, S., Bacci, A., Ammassari-Teule, M., Marie, H. & Cecconi, F., Jan 2011, In: Nature Neuroscience. 14, 1, p. 69-79 11 p.

**A brain-specific isoform of mitochondrial apoptosis-inducing factor: AIF2**

Hangen, E., De Zio, D., Bordi, M., Zhu, C., Dessen, P., Caffin, F., Lachkar, S., Perfettini, J. L., Lazar, V., Benard, J., Fimia, G. M., Piacentini, M., Harper, F., Pierron, G., Vicencio, J. M., Bénit, P., De Andrade, A., Höglinger, G., Culmsee, C., Rustin, P. & 4 others, Blomgren, K., Cecconi, F., Kroemer, G. & Modjtahedi, N., Jul 2010, In: Cell Death and Differentiation. 17, 7, p. 1155-1166 12 p.

**Faf1 is expressed during neurodevelopment and is involved in Apaf1-dependent caspase-3 activation in proneural cells**

de Zio, Daniela, Ferraro, E., D'Amelio, M., Simoni, V., Bordi, M., Soroldoni, D., Berghella, L., Meyer, B. I. & Cecconi, F., Jun 2008, In: Cellular and Molecular Life Sciences. 65, 11, p. 1780-1790 11 p.

**Expanding roles of programmed cell death in mammalian neurodevelopment**

de Zio, Daniela, Giunta, L., Corvaro, M., Ferraro, E. & Cecconi, F., Apr 2005, In: Seminars in Cell and Developmental Biology. 16, 2, p. 281-294 14 p.