

ALBAN ORDUREAU, PH.D.

Memorial Sloan-Kettering Cancer Center
430 East 67th Street, RRL-517E
New York, NY 10065, U.S.A

Phone: (+1) 212-639-2284
Email: OrdureaA@mskcc.org

POSITIONS AND EMPLOYMENT

ASSISTANT MEMBER

CELL BIOLOGY PROGRAM - SLOAN KETTERING INSTITUTE,
MEMORIAL SLOAN KETTERING CANCER CENTER

January 2021 – Current
New York, U.S.A

ASSISTANT PROFESSOR (ADJUNCT)

CELL AND DEVELOPMENTAL BIOLOGY PROGRAM - WEILL CORNELL MEDICAL COLLEGE
CORNELL UNIVERSITY

January 2021 – Current
New York, U.S.A

EDUCATION/TRAINING

POST-DOCTORAL RESEARCH SCIENTIST

DEPARTMENT OF CELL BIOLOGY – HARVARD MEDICAL SCHOOL
Supervisor: Professor J. Wade Harper

November 2012 – December 2020
Boston, U.S.A

POST-DOCTORAL RESEARCH SCIENTIST

MEDICAL RESEARCH COUNCIL PROTEIN PHOSPHORYLATION UNIT - UNIVERSITY OF DUNDEE
Supervisor: Professor Sir Philip Cohen, FRS, FRSE, FMedSci, FAA

October 2011 – October 2012
Dundee, U.K.

PH.D. STUDENT

MEDICAL RESEARCH COUNCIL PROTEIN PHOSPHORYLATION UNIT - UNIVERSITY OF DUNDEE
Supervisor: Professor Sir Philip Cohen, FRS, FRSE, FMedSci, FAA

January 2007 – September 2011
Dundee, U.K.

EDUCATION AND AWARDS

Ph.D., Biochemistry and Biomedical Sciences

UNIVERSITY OF DUNDEE – MRC-PPU

Thesis: An investigation of the role of E3 ubiquitin ligases in regulating innate immunity.

January 2007 – October 2011
Dundee, United Kingdom

Master of Biology Biotechnology and Therapeutic Research

FACULTY OF SCIENCES AND TECHNOLOGIES – UNIVERSITY OF NANTES

September 2002 – May 2006
Nantes, France

Fellowship: - Medical Research Council Four-Year Ph.D. Studentship (2007 - 2010).

- Edward R. and Anne G. Lefler Center Postdoctoral Fellowship (2015 - 2017).

COMPLETE PUBLICATION LIST (39)

- **Ordureau, A[†]**, Kraus, F., Zhang, J., An, H., Park, S., Ahfeldt, T., Paulo, J.A., Harper, J.W. [†] (2021) Temporal Proteomics During Neurogenesis Reveals Large-scale Proteome and Organelle Remodeling via Selective Autophagy. *Molecular Cell*. 2021 Oct 15:S1097-2765(21)00800-5.
- Antico, O.* **Ordureau, A.***, Stevens, M., Singh, F., Nirujogi, R.S., Gierlinski, M., Barini, E., Rickwood, M.L., Prescott, A., Toth, R., Ganley, I.G., Harper, J.W., Muqit, M.M.K. (2021) Global ubiquitylation analysis of mitochondria in primary neurons identifies endogenous Parkin targets following activation of PINK1. *Science Advances*. 2021 Nov 12;7(46):eabj0722.
- **Ordureau, A.**, Yu, Q., Bomgarden, R.D., Rogers, J.C., Harper, J.W., Gygi, S.P., Paulo, J.A. (2021) Super Heavy TMTpro Labeling Reagent: An Alternative and Higher-Charge-State-Amenable Stable-Isotope-Labeled TMTpro Variant. *J Proteome Research*. 20(5): 3009-3013.
- Najafov, A., Luu, H.S., Mookhtiar, A.K., Mifflin, L., Xia, H.G., Amin, P.P., **Ordureau, A.**, Wang, H., Yuan, J. (2021) RIPK1 Promotes Energy Sensing by the mTORC1 Pathway. *Molecular Cell*. 2021 81(2):370-385
- McKenna, M.J.* **Ordureau, A.**, Wei, L., Harper, J.W., Shao, S., Park E. (2020) The endoplasmic reticulum P5A-ATPase is a transmembrane helix dislocase. *Science* 369(6511)
- Sinha, N.K.* **Ordureau, A.***, Best, K.M.* **Saba, J.A.**, Zinshteyn, B., Sundaramoorthy, E., Fulzele, A., Garshott, D.M., Denk, T., Thoms, M., Paulo, J.A., Harper, J.W., Bennett, E.J., Beckmann, R., Green, R. (2020) EDF1 coordinates cellular responses to ribosome collisions. *eLife* 9, e58828
- An, H.* **Ordureau, A.***, Korner, M., Paulo, J.A., Harper, J.W. (2020) Systematic Quantitative Analysis of Ribosome Inventory During Nutrient Stress. *Nature* 583(7815), 303-309
- Martinez-Chacin, R.C., Bodrug, T., Bolhuis, D.L., Kedziora, K.M., Bonacci, T., **Ordureau, A.**, Gibbs, M.E., Weissmann, F., Qiao, R., Grant, G.D., Cook, J.G., Peters, J-M., Harper, J.W., Emanuele, M.J., Brown, N.G. (2020) Ubiquitin chain elongating E2 UBE2S activates the RING E3 APC/C for substrate priming with UBE2C. *Nature Structural & Molecular Biology* 27(6):550-560.
- **Ordureau, A.**, Paulo, J.A., Zhang, J., An, H., Swatek, K.N., Cannon, J.R., Wan, Q., Komander, D., Harper J.W. (2020) Global landscape and dynamics of Parkin and USP30-dependent ubiquitylomes in iNeurons during mitophagic signaling. *Molecular Cell*. 77(5):1124-1142.
- Ahfeldt, T., **Ordureau, A.**, Bell, C., Sarrafha, L., Sun, C., Piccinotti, S., Grass, T., Parfitt, G.M., Paulo, J.A., Yanagawa, F., Uozumi, T., Kiyota, Y., Harper, J.W., Rubin, L.L. (2020) Pathogenic pathways in early onset autosomal recessive Parkinson's disease discovered using isogenic human dopaminergic neurons. *Stem Cell Reports*. 14 (1), 75-90.
- Jacoupy, M., Hamon-Keromen, E., **Ordureau, A.**, Erpapazoglou, Z., Coge, F., Corvol, J-C., Nosjean, O., Mannoury La Cour, C., Millan, M. J., Boutin, J. A., Harper, J. W., Brice, A., Guedin, D., Gautier, C. A., Corti, O. (2019) The PINK1 kinase-driven ubiquitin ligase Parkin promotes mitochondrial protein import through the presequence pathway in living cells. *Scientific Reports*. 9(1):11829
- Gottlieb, C.D.* **Thompson, A.C.S.***, **Ordureau, A.**, Harper, J.W., Kopito, R.R. (2019) Acute unfolding of a single protein immediately stimulates recruitment of ubiquitin protein ligase E3C (UBE3C) to 26S proteasomes. *J Biol Chem*. 294 (45), 16511-16524
- Najafov, A., Mookhtiar, A.K., Luu, H.S., **Ordureau, A.**, Pan, H., Amin, P.P., Li, Y., Lu, Q., Yuan, J. (2019) TAM Kinases Promote Necroptosis by Regulating Oligomerization of MLKL. *Molecular Cell*. 75(3):457-468
- An, H., **Ordureau, A.**, Paulo, J.A., Shoemaker, C.J., Denic, V., Harper, J.W. (2019) TEX264 is an ER-resident ATG8-interacting protein critical for endoplasmic reticulum remodeling during nutrient stress. *Molecular Cell*. 74(5):891-908.
 - Featured in a Spotlight of Trends in Biochemical Science as well as Editor's Corner of Autophagy
- Heo, J.M., **Ordureau, A.**, Swarup, S., Paulo, J.A., Shen, K., Sabatini, D.M., Harper, J.W. (2018) RAB7A phosphorylation by TBK1 promotes mitophagy via the PINK-PARKIN pathway. *Science Advances*. Nov 21;4(11)
- **Ordureau, A.**, Paulo, J.A., Zhang, W., Ahfeldt, T., Zhang, J., Cohn, E.F., Hou, Z., Heo, J.M., Rubin, L.L., Sidhu, S.S., Gygi, S.P., Harper, J.W. (2018) Dynamics of PARKIN-Dependent Mitochondrial Ubiquitylation in Induced Neurons and Model Systems Revealed by Digital Snapshot Proteomics. *Molecular Cell*. 70(2) 211-227
- Harper, J.W., **Ordureau, A.**, Heo, J.M. (2018) Building and decoding ubiquitin chains for mitophagy. *Nat Rev Mol Cell Biol*. 19(2):93-108
- Mohideen, F., Paulo, J.A., **Ordureau, A.**, Gygi, S.P., Harper, J.W. (2017) Quantitative Phospho-proteomic Analysis of TNF α /NF κ B Signaling Reveals a Role for RIPK1 Phosphorylation in Suppressing Necrotic Cell Death. *Mol Cell Proteomics*. 16(7):1200-1216.

- Wang, B., Jie, Z., Joo, D., **Ordureau, A.**, Liu, P., Gan, W., Guo, J., Zhang, J., North, B.J., Dai, X., Cheng, X., Bian, X., Zhang, L., Harper, J.W., Sun, S.C., Wei, W. (2017) TRAF2 and OTUD7B govern a ubiquitin-dependent switch that regulates mTORC2 signalling. *Nature*, 545(7654):365-369.
- Liu L, Michowski W, Inuzuka H, Shimizu K, Nihira NT, Chick JM, Li N, Geng Y, Meng AY, **Ordureau A**, Kolodziejczyk A, Ligon KL, Bronson RT, Polyak K, Harper JW, Gygi SP, Wei W, Sicinski P. (2017) G1 cyclins link proliferation, pluripotency and differentiation of embryonic stem cells. *Nat Cell Biol.* 19(3):177-188.
- Rose C.M.*, Isasa M.*, **Ordureau A.**, Prado M.A., Beausoleil S.A., Jedrychowski M.P., Finley D.J., Harper J.W., Gygi S.P. (2016). Highly Multiplexed Quantitative Mass Spectrometry Analysis of Ubiquitylomes. *Cell Systems* 3(4):395-403
- Brown, N. G.*, VanderLinden, R.*, Watson, E. R.*, Weissmann, F., **Ordureau, A.**, Wu, K.-P., Zhang, W., Yu, S., Mercredi, P.Y., Harrison, J.S., Davidson, I.F., Qiao, R., Lu, Y., Dube, P., Brunner, M.R., Grace, C.R., Miller, D.J., Haselbach, D., Jarvis, M.A., Yamaguchi, M., Yanishevski, D., Petzold, G., Sidhu, S.S., Kuhlman, B., Kirschner, M.W., Harper, J.W., Peters, J.M., Stark, H., Schulman, B.A. (2016). Dual RING E3 Architectures Regulate Multiubiquitination and Ubiquitin Chain Elongation by APC/C. *Cell* 165(6), 1440–1453.
- Zhang, W.*, Wu, K.-P.*, Sartori, M.A., Kamadurai, H.B., **Ordureau, A.**, Jiang, C., Mercredi, P.Y., Murchie, R., Hu, J., Persaud, A., Mukherjee, M., Li, N., Doye, A., Walker, J.R., Sheng, Y., Hao, Z., Li, Y., Brown, Y.K., Lemichez, E., Chen, J., Tong, Y., Harper, J.W., Moffat, J., Rotin, D., Schulman, B.A., and Sidhu, S.S (2016). System-Wide Modulation of HECT E3 Ligases with Selective Ubiquitin Variant Probes. *Molecular Cell* 62, 121–136.
- Heo, J.H., **Ordureau, A.**, Paulo, J.A., Rinehart, J., and Harper, J.W. (2015) The PINK1-PARKIN Mitochondrial Ubiquitylation Pathway Drives a Program of OPTN/NDP52 Recruitment and TBK1 Activation to Promote Mitophagy. *Molecular Cell* 60, 7–20.
- Huttlin, E.L., Ting, L., Bruckner, R.J., Gebreab, F., Gygi, M.P., Szpyt, J., Tam, S., Zarraga, G., Colby, G., Baltier, K., Dong, R., Guarani, V., Vaites, L.P., **Ordureau, A.**, Rad, R., Erickson, B.K., Wuhr, M., Chick, J., Zhai, B., Kolippakkam, D., Mintseris, J., Obar, R.A., Harris, T., Artavanis-Tsakonas, S., Sowa, M.E., De Camilli, P., Paulo, J.A., Harper, J.W., and Gygi, S.P. (2015). The BioPlex Network: A Systematic Exploration of the Human Interactome. *Cell* 162, 425-440.
- Pickrell, A.M.*, Huang, C.H.*, Kennedy, S.R., **Ordureau, A.**, Sideris, D.P., Hoekstra, J.G., Harper, J.W., and Youle, R.J. (2015). Endogenous Parkin Preserves Dopaminergic Substantia Nigral Neurons following Mitochondrial DNA Mutagenic Stress. *Neuron* 87, 371-381.
- **Ordureau, A.**, Munch, C., and Harper, J.W. (2015). Quantifying ubiquitin signaling. *Molecular Cell* 58, 660-676.
- **Ordureau, A.**, Heo, J.M., Duda, D.M., Paulo, J.A., Olszewski, J.L., Yanishevski, D., Rinehart, J., Schulman, B.A., and Harper, J.W. (2015). Defining roles of PARKIN and ubiquitin phosphorylation by PINK1 in mitochondrial quality control using a ubiquitin replacement strategy. *Proc Natl Acad Sci USA* 112, 6637-6642.
- Cirulli, E.T., Lasseigne, B.N., Petrovski, S., Sapp, P.C., Dion, P.A., Leblond, C.S., Couthouis, J., Lu, Y.F., Wang, Q., Krueger, B.J., Ren, Z., Keebler, J., Han, Y., Levy, S.E., Boone, B.E., Wimbish, J.R., Waite, L.L., Jones, A.L., Carulli, J.P., Day-Williams, A.G., Staropoli, J.F., Xin, W.W., Chesi, A., Raphael, A.R., McKenna-Yasek, D., Cady, J., Vianney de Jong, J.M., Kenna, K.P., Smith, B.N., Topp, S., Miller, J., Gkazi, A., Consortium, F.S., Al-Chalabi, A., van den Berg, L.H., Veldink, J., Silani, V., Ticozzi, N., Shaw, C.E., Baloh, R.H., Appel, S., Simpson, E., Lagier-Tourenne, C., Pulst, S.M., Gibson, S., Trojanowski, J.Q., Elman, L., McCluskey, L., Grossman, M., Shneider, N.A., Chung, W.K., Ravits, J.M., Glass, J.D., Sims, K.B., Van Deerlin, V.M., Maniatis, T., Hayes, S.D., **Ordureau, A.**, Swarup, S., Landers, J., Baas, F., Allen, A.S., Bedlack, R.S., Harper, J.W., Rouleau, G.A., Brown, R., Harms, M.B., Cooper, G.M., Harris, T., Myers, R.M., and Goldstein, D.B. (2015). Exome sequencing in amyotrophic lateral sclerosis identifies risk genes and pathways. *Science* 347, 1436-1441.
- Li, N., Fassl, A., Chick, J., Inuzuka, H., Li, X., Mansour, M.R., Liu, L., Wang, H., King, B., Shaik, S., Gutierrez, A., **Ordureau, A.**, Otto, T., Kreslavsky, T., Baitsch, L., Bury, L., Meyer, C.A., Ke, N., Mulry, K.A., Kluk, M.J., Roy, M., Kim, S., Zhang, X., Geng, Y., Zagozdzon, A., Jenkinson, S., Gale, R.E., Linch, D.C., Zhao, J.J., Mullighan, C.G., Harper, J.W., Aster, J.C., Aifantis, I., von Boehmer, H., Gygi, S.P., Wei, W., Look, A.T., and Sicinski, P. (2014). Cyclin C is a haploinsufficient tumour suppressor. *Nat Cell Biol* 16, 1080-1091.
- **Ordureau, A.**, Sarraf, S.A., Duda, D.M., Heo, J.M., Jedrychowski, M.P., Sviderskiy, V.O., Olszewski, J.L., Koerber, J.T., Xie, T., Beausoleil, S.A., Wells, J.A., Gygi, S.P., Schulman, B.A., and Harper, J.W. (2014). Quantitative proteomics reveal a feedforward mechanism for mitochondrial PARKIN translocation and ubiquitin chain synthesis. *Molecular Cell* 56, 360-375.
 - *Commentary:* Stolz, A., & Dikic, I. (2014). PINK1-PARKIN interplay: down to ubiquitin phosphorylation. *Mol. Cell*, 56(3), 341–342.
- **Ordureau, A.**, and Harper, J.W. (2014). Cell biology: balancing act. *Nature* 510, 347-348.
- Emmerich, C.H., **Ordureau, A.**, Strickson, S., Arthur, J.S., Pedrioli, P.G., Komander, D., and Cohen, P. (2013). Activation of the canonical IKK complex by K63/M1-linked hybrid ubiquitin chains. *Proc Natl Acad Sci USA* 110, 15247-15252.
- **Ordureau, A.**, Enesa, K., Nanda, S., Le Francois, B., Peggie, M., Prescott, A., Albert, P.R., and Cohen, P. (2013). DEAF1 is a Pellino1-interacting protein required for interferon production by Sendai virus and double-stranded RNA. *J Biol Chem* 288, 24569-24580.

- Enesa, K., **Ordureau, A.**, Smith, H., Barford, D., Cheung, P.C., Patterson-Kane, J., Arthur, J.S., and Cohen, P. (2012). Pellino1 is required for interferon production by viral double-stranded RNA. *J Biol Chem* 287, 34825-34835.
- Gleason, C.E., **Ordureau, A.**, Gourlay, R., Arthur, J.S., and Cohen, P. (2011). Polyubiquitin binding to optineurin is required for optimal activation of TANK-binding kinase 1 and production of interferon beta. *J Biol Chem* 286, 35663-35674.
- Nanda, S.K., Venigalla, R.K., **Ordureau, A.**, Patterson-Kane, J.C., Powell, D.W., Toth, R., Arthur, J.S., and Cohen, P. (2011). Polyubiquitin binding to ABIN1 is required to prevent autoimmunity. *J Exp Med* 208, 1215-1228.
- Nichols, R.J., Dzamko, N., Morrice, N.A., Campbell, D.G., Deak, M., **Ordureau, A.**, Macartney, T., Tong, Y., Shen, J., Prescott, A.R., and Alessi, D.R. (2010). 14-3-3 binding to LRRK2 is disrupted by multiple Parkinson's disease-associated mutations and regulates cytoplasmic localization. *Biochem J.* 430, 393-404.
- **Ordureau, A.***, Smith, H.* , Windheim, M., Peggie, M., Carrick, E., Morrice, N., and Cohen, P. (2008). The IRAK-catalysed activation of the E3 ligase function of Pellino isoforms induces the Lys63-linked polyubiquitination of IRAK1. *Biochem J.* 409, 43-52.

* denotes equal contribution, † denotes co-corresponding authors

Full bibliography with article citations: [Alban Ordureau](#)
