



## Anastasia Kralli

### Titles & Department

Professor of Physiology

### Specialization Area

Metabolic function of adipose tissue and skeletal muscle.

### Unmet Need

Elucidation of molecular targets for metabolic diseases.

### Summary of Research & Work

Professor Kralli's research is focused on understanding the impact of Estrogen-Related Receptor-mediated signaling that govern cellular responses during metabolic stress in adipose tissue and skeletal muscle. Under circumstances of metabolic dysregulation, Kralli's group is identifying transcriptional networks and pathways that provide opportunity for therapeutic interventions in several metabolic diseases, such as type 2 diabetes, disease-associated muscle atrophies, and age-related degenerative diseases.

### Value Proposition

- Transcriptional networks for metabolic diseases.
- Therapeutic activation of brown fat thermogenesis.
- Web knowledgebase for mammalian signaling pathways.
- Development of metabolic targeting therapeutics for skeletal muscle diseases.

### Recent Publications

- Rahbani JF, Scholtes C, Lagarde DM, Hussain MF, Roesler A, Dykstra CB, Bunk J, Samborska B, O'Brien SL, Tripp E, Pacis A, Angueira AR, Johansen OS, Cinkornpumin J, Hossain I, Lynes MD, Zhang Y, White AP, Pastor WA, Chondronikola M, Sidossis L, Klein S, Kralli A, Cypess AM, Pedersen SB, Jessen N, Tseng YH, Gerhart-Hines Z, Seale P, Calebiro D, Giguère V, Kazak L. ADRA1A- $G\alpha_q$  signalling potentiates adipocyte thermogenesis through CKB and TNAP. *Nat Metab.* 2022 Nov;4(11):1459-1473.
- Ochsner SA, Abraham D, Martin K, Ding W, McOwiti A, Kankanamge W, Wang Z, Andreano K, Hamilton RA, Chen Y, Hamilton A, Gantner ML, Dehart M, Qu S, Hilsenbeck SG, Becnel LB, Bridges D, Ma'ayan A, Huss JM, Stossi F, Foulds CE, Kralli A, McDonnell DP, McKenna NJ. The Signaling Pathways Project, an integrated 'omics knowledgebase for mammalian cellular signaling pathways. *Sci Data.* 2019 Oct 31;6(1):252.
- Cho Y, Tachibana S, Hazen BC, Moresco JJ, Yates JR 3rd, Kok B, Saez E, Ross RS, Russell AP, Kralli A. Perm1 regulates CaMKII activation and shapes skeletal muscle responses to endurance exercise training. *Mol Metab.* 2019 May;23:88-97.

- Watzek JS, Eury E, Hazen BC, Wade A, Chau S, Ou SC, Russell AP, Cho Y, Kralli A. Loss of skeletal muscle estrogen-related receptors leads to severe exercise intolerance. *Mol Metab.* 2023 Feb;68:101670.
- Jordan SD, Kriebs A, Vaughan M, Duglan D, Fan W, Henriksson E, Huber AL, Papp SJ, Nguyen M, Afetian M, Downes M, Yu RT, Kralli A, Evans RM, Lamia KA. CRY1/2 Selectively Repress PPAR $\delta$  and Limit Exercise Capacity. *Cell Metab.* 2017 Jul 5;26(1):243-255.e6.