

## Resume Dr Francesca **Sacco**, PhD

Associate Professor of Genetics, Department of Biology, University of Tor Vergata  
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### **I. Education**

2011 PhD in Cellular and Molecular Biology, University of Rome Tor Vergata, Rome, Italy  
2008 M.Sc in Cellular and Molecular Biology University of Rome Tor Vergata, Rome, Italy  
2006 B.Sc in Cellular and Molecular Biology University of Rome Tor Vergata, Rome, Italy

### **II. Professional Qualification**

2018-2021 Assistant Professor of Genetics, Department of Biology, University of Tor Vergata  
2012-2017 Post Doctoral Fellow, MPI, Martinsried, Germany. Mentor: M. Mann  
2012 Post Doctoral Fellow, University of Rome Tor Vergata, Rome, Italy. Mentor: G. Cesareni  
2008-2011 PhD, University of Rome Tor Vergata, Rome, Italy. Mentor: G. Cesareni

### **III. Selected achievements**

- Awarded AIRC Start-up grant
- Awarded Rita Levi Montalcini grant
- Awarded L'Oreal for Women in Science fellowship
- Awarded EMBO Long Term Fellowship.
- Ad hoc peer reviewer for manuscripts submitted to medium-high impact factor journals.
- Manuscript selected for the cover image of the March issue 2016 of the Cell Systems journal.
- Poster prize at the "Translating Diabetes" meeting at the EMBL, Heidelberg, 2014.
- Selected speakers in national and international conferences.

### **IV. Publications**

1. Palma A, Iannuccelli M, Rozzo I, Licata L, Perfetto L, Massacci G, Castagnoli L, Cesareni G, **Sacco F**. Integrating Patient-Specific Information into Logic Models of Complex Diseases: Application to Acute Myeloid Leukemia. *J Pers Med*. 2021 Feb 10;11(2):117. doi: 10.3390/jpm11020117. PMID: 33578936; PMCID: PMC7916657.
2. Petrilli LL, Riccio F, Giuliani G, Palma A, Gargioli C, Vumbaca S, Faron M, Palmieri G, Pasquini L, **Sacco E**, Cesareni G, Castagnoli L, Fuoco C. Skeletal Muscle Subpopulation Rearrangements upon Rhabdomyosarcoma Development through Single-Cell Mass Cytometry. *J Clin Med*. 2021 Feb 17;10(4):823. doi: 10.3390/jcm10040823. PMID: 33671425; PMCID: PMC7922544.
3. Perfetto L, Micarelli E, Iannuccelli M, Lo Surdo P, Giuliani G, Latini S, Pugliese GM, Massacci G, Vumbaca S, Riccio F, Fuoco C, Paoluzi S, Castagnoli L, Cesareni G, Licata L, **Sacco F**. A Resource for the Network Representation of Cell Perturbations Caused by SARS-CoV-2 Infection. *Genes (Basel)*. 2021 Mar 22;12(3):450. doi: 10.3390/genes12030450. PMID: 33809949; PMCID: PMC8004236.
4. Pugliese GM, Latini S, Massacci G, Perfetto L, **Sacco F**. Combining Mass Spectrometry-Based Phosphoproteomics with a Network-Based Approach to Reveal FLT3-Dependent Mechanisms of Chemoresistance. *Proteomes*. 2021 Apr 27;9(2):19. doi: 10.3390/proteomes9020019. PMID: 33925552; PMCID: PMC8167576.
5. Cesareni G, **Sacco F**, Perfetto L. Assembling Disease Networks From Causal Interaction Resources. *Front Genet*. 2021 Jun 11;12:694468. doi: 10.3389/fgene.2021.694468. PMID: 34178043; PMCID: PMC8226215.
6. Reggio A, Rosina M, Palma A, Cerquone Perpetuini A, Petrilli LL, Gargioli C, Fuoco C, Micarelli E, Giuliani G, Cerretani M, Bresciani A, **Sacco F**, Castagnoli L, Cesareni G. (2020) Adipogenesis of skeletal muscle fibro/adipogenic progenitors is affected by the WNT5a/GSK3/β-catenin axis. *Cell Death and differentiation*.
7. Reggio A, Rosina M, Kraemer N, Palma A, Petrilli LL, Maiolatesi G, Massacci G, Salvatori I, Valle C, Testa S, Gargioli C, Fuoco C, Castagnoli L, Cesareni G, **Sacco F\***. (2020) Metabolic reprogramming of fibro/adipogenic progenitors facilitates muscle regeneration. *Life Sci Alliance*. 3(3).

8. Itzhak DN, **Sacco F**, Nagaraj N, Tyanova S, Mann M, Murgia M. SILAC-based quantitative proteomics using mass spectrometry quantifies endoplasmic reticulum stress in whole HeLa cells. *Dis Model Mech.* 12(11)
9. Palma A, Cerquone Perpetuini A, Ferrentino F, Fuoco C, Gargioli C, Giuliani G, Iannuccelli M, Licata L, Micarelli E, Paoluzi S, Perfetto L, Petrilli LL, Reggio A, Rosina M, **Sacco F**, Vumbaca S, Zuccotti A, Castagnoli L, Cesareni G. (2019) Myo-REG: A Portal for Signaling Interactions in Muscle Regeneration. *Front Physiol.* 10:1216.
10. Marinkovic M, Fuoco C, **Sacco F**, Cerquone Perpetuini A, Giuliani G, Micarelli E, Pavlidou T, Petrilli LL, Reggio A, Riccio F, Spada F, Vumbaca S, Zuccotti A, Castagnoli L, Mann M, Gargioli C, Cesareni G. (2019) Fibro-adipogenic progenitors of dystrophic mice are insensitive to NOTCH regulation of adipogenesis. *Life Sci Alliance.* Jun 25;2(3). I have contributed to elucidate the mechanisms underlying fibro-adipogenic progenitors adipogenesis in dystrophic mice.
11. **Sacco F**\*, Seelig A, Humphrey SJ, Krahmer N, Volta F, Reggio A, Marchetti P, Gerdes J, Mann M. (2019). *Phosphoproteomics Reveals the GSK3-PDX1 Axis as a Key Pathogenic Signaling Node in Diabetic Islets.* *Cell Metab.* 2019 Jun 4;29(6):1422-1432.
12. **Sacco F**, Perfetto, L. and Cesareni G. (2018) Combining phosphoproteomics datasets and literature information to reveal the functional connections in a cell phosphorylation network. *Proteomics*, 18(5-6).
13. **Sacco F**, Caldarone, A., Castagnoli, L. and Cesareni G. (2016) The cell autonomous mechanisms underlying the activity of metformin as an anticancer drug. *British Journal of Cancer*, (12):1451-1456.
14. **Sacco F**, Humphrey, S., Cox, J., Mischnik, M., Klabunde, T., Schafer, M. and Mann, M. (2016) Glucose-regulated and drug perturbed beta-cell phosphoproteome reveals molecular mechanisms controlling insulin secretion. *Nature Communications* 7, 13250.
15. Stabicki, M., Lee, K. S., Jethwa, A., Sellner, L., **Sacco F**, [...] and Zenz, T. (2016) Dissection of CD20 regulation in lymphoma using RNAi. *Leukemia*, (12):2409-2412.
16. **Sacco F**, Mattioni, M., Boldt, K., Panni, S., Santonico, E., Castagnoli, L., Ueffing, M. and Cesareni, G. A subset of RAB proteins modulates PP2A phosphatase activity. *Scientific Reports* 2016 6, 32857.
17. **Sacco F**, Silvestri, A., Posca, D., Pirrò, S., Gherardini, Pier F., Castagnoli, L., Mann, M., and Cesareni, G. (2016) Deep Proteomics of Breast Cancer Cells Reveals that Metformin Rewires Signaling Networks Away from a Pro-growth State. *Cell Systems* 2, 2, 1-13.
18. Mischnik, M., **Sacco F**, Cox, J., Schneider, H.C., Schafer, M., Hendlich, M., Crowther, D., Mann, M., and Klabunde, T. (2016) IKAP: A heuristic framework for inference of kinase activities from Phosphoproteomics data. *Bioinformatics* 32, 424-431.
19. Corallino, S., Iwai, L.K., Payne, L.S., Huang, P.H., **Sacco F**, Cesareni, G., and Castagnoli, L. (2015) Alterations in the phosphoproteomic profile of cells expressing a non-functional form of the SHP2 phosphatase. *New biotechnology* 33: 524-36.
20. **Sacco F**, Boldt, K., Calderone, A., Panni, S., Paoluzi, S., Castagnoli, L., Ueffing, M., and Cesareni, G. (2014). Combining affinity proteomics and network context to identify new phosphatase substrates and adapters in growth pathways. *Frontiers in genetics* 5, 115.
21. Tinti, M., Kiemer, L., Costa, S., Miller, M.L., **Sacco F**, Olsen, J.V., Carducci, M., Paoluzi, S., Langone, F., Workman, C.T., Blom, N., Machida, K., Thompson, C.M., Schutkowski, M., Brunak, S., Mann, M., Mayer, B.J., Castagnoli, L., and Cesareni, G. (2013). The SH2 domain interaction landscape. *Cell reports* 3, 1293-1305.
22. Liberti, S., **Sacco F**, Calderone, A., Perfetto, L., Iannuccelli, M., Panni, S., Santonico, E., Palma, A., Nardoza, A.P., Castagnoli, L., and Cesareni, G. (2013). HuPho: the human phosphatase portal. *The FEBS journal* 280, 379-387.
23. **Sacco F**, Gherardini, P.F., Paoluzi, S., Saez-Rodriguez, J., Helmer-Citterich, M., Ragnini-Wilson, A., Castagnoli, L., and Cesareni, G. (2012a). Mapping the human phosphatome on growth pathways. *Molecular systems biology* 8, 603.
24. **Sacco F**, Perfetto, L., Castagnoli, L., and Cesareni, G. (2012b). The human phosphatase interactome: An intricate family portrait. *FEBS letters* 586, 2732-2739.
25. Licata, L., Briganti, L., Peluso, D., Perfetto, L., Iannuccelli, M., Galeota, E., **Sacco F**, Palma, A., Nardoza, A.P., Santonico, E., Castagnoli, L., and Cesareni, G. (2012). MINT, the molecular interaction database: 2012 update. *Nucleic acids research* 40, D857-861.
26. Tinti, M., Nardoza, A.P., Ferrari, E., **Sacco F**, Corallino, S., Castagnoli, L., and Cesareni, G. (2012). The 4G10, pY20 and p-TYR-100 antibody specificity: profiling by peptide microarrays. *New biotechnology* 29, 571-577.
27. **Sacco F**, Corallino, S., Castagnoli, L. (2011) PTPRJ (protein tyrosine phosphatase, receptor type, J). *AGCOH J Oct*; 10: 867-872.
28. **Sacco F**, Tinti, M., Palma, A., Ferrari, E., Nardoza, A.P., Hooft van Huijsduijnen, R., Takahashi, T., Castagnoli, L., and Cesareni, G. (2009). Tumor suppressor density-enhanced phosphatase-1 (DEP-1)

inhibits the RAS pathway by direct dephosphorylation of ERK1/2 kinases. The Journal of biological chemistry 284, 22048-22058.

29. Chatr-aryamontri, A., Ceol, A., Peluso, D., Nardoza, A., Panni, S., **Sacco, F.**, Tinti, M., Smolyar, A., Castagnoli, L., Vidal, M., Cusick, M.E., and Cesareni, G. (2009). VirusMINT: a viral protein interaction database. Nucleic acids research 37, D669-673.