



Metabolomics and Lipidomics Profiling of a Combined Mitochondrial Plus Endoplasmic Reticulum Fraction of Human Fibroblasts: A Robust Tool for Clinical Studies

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Auteur	Veyrat-Durebex, Charlotte [1], Bocca, Cinzia [2], Chupin, Stéphanie [3], Kouassi Nzougnet, Judith [4], Simard, Gilles [5], Lenaers, Guy [6], Reynier, Pascal [7], Blasco, Hélène [8]
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Résumé en anglais	Mitochondria and endoplasmic reticulum (ER) are physically and functionally connected. This close interaction, via mitochondria-associated membranes, is increasingly explored and supports the importance of studying these two organelles as a whole. Metabolomics and lipidomics are powerful approaches for the exploration of metabolic pathways that may be useful to provide deeper information on these organelles' functions, dysfunctions, and interactions. We developed a quick and simple experimental procedure for the purification of a mitochondria-ER fraction from human fibroblasts. We applied combined metabolomics and lipidomics analyses by mass spectrometry with excellent reproducibility. Seventy-two metabolites and 418 complex lipids were detected with a mean coefficient of variation around 12%, among which many were specific to the mitochondrial metabolism. Thus this strategy based on robust mitochondria-ER extraction and "omics" combination will be useful for investigating the pathophysiology of complex diseases.
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Liens

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- [21] <https://pubs.acs.org/doi/10.1021/acs.jproteome.7b00637>
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