



UNIVERSITÀ
DI TRENTO

Dipartimento di
Biologia Cellulare, Computazionale e Integrata - CIBIO

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AN ORGANELLE-RESOLVED TRANSLOCOME ATLAS OF CORONAVIRUS-INFECTED CELLS REVEALS CONSERVED HOST DEPENDENCY AND RESTRICTION FACTORS AMONG +RNA VIRUSES

The most striking among the alterations induced by the infection of +RNA viruses is the formation of the viral replication organelle (RO), a specialized membrane-delimited organelle where the viral genome replication takes place. For SARS-CoV-2, the etiological agent of the COVID-19 disease, the viral ROs are composed of double membrane vesicles that originate from and are in contact with the endoplasmic reticulum. We performed organelle-resolved proteomics in Coronavirus-infected cells to define the cellular “translocome,” encompassing host proteins that relocate in response to infection. Genetic perturbation screening performed on a selected list of translocating proteins revealed previously unrecognized host dependency and restriction factors for SARS-CoV-2.