

Organelle-ID RGB™ III Assay Kit

for detection of the Golgi, ER and Nucleus by microscopy

The endoplasmic reticulum (ER) and Golgi apparatus (GA) are the primary organelles responsible for the proper sorting of lipids and proteins by cells. Direct membrane continuity between these organelles has been established using different analytical methods, ranging from reconstruction of serial sections in transmission electron microscopy to functional analysis of the transport process itself. After synthesis, folding and quality control, the lipid and protein cargo exit from the ER and enter the GA through the ER-Golgi interface. Within the ER-Golgi interface, COPII-mediated concentration of membrane and soluble cargo occurs and various post-translational modifications take place prior to delivery to the GA, including O-glycosylation, acylation, palmitoylation and mannose-6-phosphate attachment (lysosomal targeting signal). Transient ER-Golgi connections are likely to serve a role in the diffusion of cargo proteins as well as the recycling of organelle-resident proteins. The structure and functions of the various compartments along the secretory pathway are considered complicated and tools for the simple visualization and unambiguous categorization of the ER and GA in living cells have been lacking.

Organelle-ID RGB™ III Assay Kit

ENZ-51032-K100

100 Assays

Compared with other commercially available dyes for labeling Golgi bodies, the green dye component of the Organelle-ID RGB™ III detection reagent is more faithfully localized to the Golgi apparatus, with minimal staining of the endoplasmic reticulum. The red dye component of the reagent stains the endoplasmic reticulum with high fidelity and is specifically designed for use with green fluorescing probes. Organelle-ID RGB™ III assay kit is validated with human cervical carcinoma cell line HeLa, human T-lymphocyte cell line, Jurkat, canine kidney cell line MDCK, and human bone osteosarcoma epithelial cell line U2OS.

The kit should also be suitable for identifying Golgi body and endoplasmic reticulum perturbing agents and thus can be a useful tool for examining the transport and recycling of molecules from the GA to ER in cellular secretory pathways.

- Assay Golgi and ER dynamics in live cells
- Highly resistant to photo-bleaching, concentration quenching and photo-conversion
- Identify modulators of secretory membrane traffic and organelle integrity

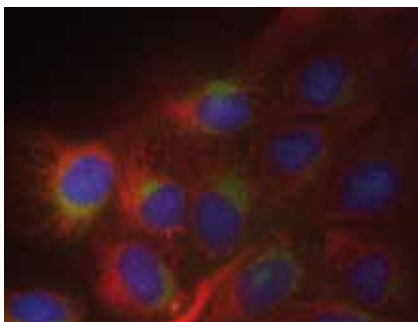


FIGURE 1: Selectivity of organelles. Organelle-ID RGB™ staining in MDCK cells. The selectivities of the ER-ID™ Red dye, Golgi-ID™ Green dye and the Hoechst 33342 dye are evident.

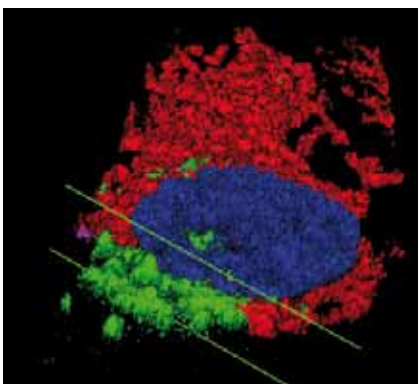


FIGURE 2: 3D Imaging of ER (red) and Golgi body (green) displayed relative to nucleus (blue). Three-dimensional reconstruction of the spatial relationship between the Golgi body and the endoplasmic reticulum using a structured illumination method. This was accomplished with the Apotome device from Carl Zeiss, Inc. This imaging hardware enabled creation of optical sections through the cell using a conventional wide field fluorescence microscope, for improved resolution along the optical axis. The optical sections were then used to create a 3-D reconstruction of the endoplasmic reticulum (red) and Golgi body (green), enabling display in their proper spatial context relative to the nucleus (blue).

Ordering Information

| Product | Prod. No. | Size |
|---|----------------|------------|
| Organelle-ID RGB™ III assay kit for microscopy | ENZ-51032-K100 | 100 Assays |

Related Products

| Product | Prod. No. | Size |
|--|----------------|------------|
| ER-ID™ Green assay kit | ENZ-51025-K500 | 500 Assays |
| ER-ID™ Red assay kit (GFP-Certified™) | ENZ-51026-K500 | 500 Assays |
| Golgi-ID™ Green assay kit | ENZ-51028-K100 | 100 Assays |
| Lyso-ID® Green detection kit | ENZ-51034-K500 | 500 Assays |
| Lyso-ID® Red detection kit (GFP-Certified™) | ENZ-51005-500 | 500 Assays |
| Mito-ID™ Red detection kit (GFP-Certified™) | ENZ-51007-500 | 500 Assays |
| Mito-ID™ Green detection kit | ENZ-51022-K500 | 500 Assays |
| Organelle-ID RGB™ reagent I | ENZ-53007-C200 | 200 µl |
| Organelle-ID RGB™ reagent II | ENZ-53008-C200 | 200 µl |
| Organelle-ID RGB™ reagent IV | ENZ-53009-C200 | 200 µl |
| Nucleolar-ID™ Green detection kit | ENZ-51009-500 | 500 Assays |
| Total Nuclear-ID™ Green/Red nucleolar/nuclear detection kit | ENZ-51006-500 | 500 Assays |
| Mito-ID™ Red antifade reagent | ENZ-53002-M010 | 10 ml |
| Mito-ID™ Red antifade reagent with DAPI | ENZ-53003-M010 | 10 ml |

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