HiBiT-HaloTag-LC3 Tandem Reporter Enables Multiple Autophagy Assay Modalities

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1. Introduction
Researchers interrogating cellular functions often leverage complementary assay technologies to confirm observations. Promega offers many choices, including bioluminescent reporters, fluorescence imaging capabilities, and now antibody-free protein blotting. Delivering all these assay modalities with a single reporter module, HiBiT-HaloTag, is a unique Promega capability. As demonstrated with the Autophagy LC3 HiBiT Reporter, this tandem reporter system allows researchers to perform plate reader assays, HiBiT protein blotting, and HaloTag imaging using a single reporter cell line. The versatile autophagy reporter provides a powerful tool for the quantitative study of the autophagy pathway, the identification of novel modulators of autophagic flux, and the efficient confirmation of mechanism of action. Use of the HiBiT-HaloTag module in other reporter constructs will provide significant opportunities to perform quantitative and conclusive biological studies with powerful, complementary assay technologies.

2. HiBiT-HaloTag enables multiple assay modalities

3. LC3 protein dynamics provide a useful indicator of autophagic activity

4. Principle of autophagy plate reader assay format

5. Plate reader assay on 2D and 3D cell models

6. Automated performance in 384-well plates

7. Nano-Glo® HiBiT blotting assay format

8. Janelia Fluor® 646 HaloTag® Ligand enables imaging of low expression reporter

9. Conclusions

Complex biology often requires orthogonal assay methods to interrogate. HiBiT-HaloTag reporter module enables

- plate reader quantitation of reporter levels
- antibody-free blotting of reporter protein
- fluorescence imaging of reporter subcellular localization
- protein capture capabilities (not shown)

HiBiT-HaloTag-LC3 tandem reporter (a.k.a. Autophagy LC3 HiBiT Reporter) facilitates quantitative and conclusive studies of autophagic activity with powerful and complementary assay technologies.

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