

Resource Summary Report

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Agilent: BioTek: Synergy HT Plate Reader

RRID:SCR_020536

Type: Tool

Proper Citation

Agilent: BioTek: Synergy HT Plate Reader (RRID:SCR_020536)

Resource Information

URL: <https://www.biotek.com/resources/presentations/synergy-ht-a-multi-mode-microplate-reader-for-todays-high-performance-luminescence-research/>

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Description: Luminescent assays are sensitive and quantitative tools commonly used for a variety of purposes in biomedical and pharmaceutical research. Quantitation of ATP can be used to detect and measure cellular growth, as well as bacterial contamination. Luminescent genetic reporting assays are widely used to study gene expression and cellular responses to external stimuli in Prokaryotic and Eukaryotic organisms. Dual-reporter assays use two independent reporter systems simultaneously to improve experimental accuracy. One reporter is used to measure the response resulting from the experimental conditions and is often referred to as the “experimental” reporter. The second reporter is designed not to respond to the experimental conditions, acting as an internal control from which data generated by the experimental reporter can be normalized. Normalization of the data serves to compensate for variability caused by differences in transfection efficiency, cell viability, cell lysis, and pipetting. Promega's Dual-Luciferase System uses the activities of luminescent proteins (luciferases) from the firefly (*Photinus pyralis*) beetle and the sea pansy (*Renilla reniformis*) to serve as an experimental and a control reporter respectively (See Figure 1). The Synergy HT Multi-Detection Reader (BioTek Instruments, Winooski, VT) is a robotic compatible microplate reader that can measure absorbance, fluorescence, and luminescence in all plate formats up to 384-well plates with performance in all three detection modes, that has recently been optimized for luminescence measurements (Figure 2). The Synergy HT utilizes a dual optics design that has both a monochromator/xenon flash system with a silicone diode detector for absorbance and a tungsten halogen lamp with blocking interference filters and a photomultiplier tube (PMT) detector for fluorescence. Reagent addition is accomplished by an optional external injector module, which controls two independent injector syringes. Each syringe is connected to a separate injector tip. Emitted luminescence is captured using either the top or bottom probes and measured using the Synergy HT's low noise PMT operated in photon integration mode. Here we describe the use of a Synergy HT Multi-Detection Microplate Reader (BioTek Instruments) to perform dual-luciferase

measurements with purified recombinant enzymes.

Resource Type: instrument resource

Keywords: Biotek, Microplate Reader, Instrument, Equipment,

Availability: Commercially available

Specification URL: https://raw.githubusercontent.com/SciCrunch/RRID-Instruments/refs/heads/main/PDF/SCR_020536.pdf

Resource Name: Agilent: BioTek: Synergy HT Plate Reader

Resource ID: SCR_020536

Alternate IDs: Model_Number_Synergy HT

Record Creation Time: 20220129T080350+0000

Record Last Update: 20260801T190700+0000

Ratings and Alerts

No rating or validation information has been found for Agilent: BioTek: Synergy HT Plate Reader.

No alerts have been found for Agilent: BioTek: Synergy HT Plate Reader.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 18 mentions in open access literature.

Listed below are recent publications. The full list is available at [RRID](#) .

Liu B, et al. (2026) Canonical microRNA loss drives tumor development, implicating therapeutic efficacy of enoxacin in angiosarcoma. RNA (New York, N.Y.), 32(6), 812.

Rock RR, et al. (2026) Female-enriched Eggerthella lenta drives neuroinflammation and IFN- γ via host receptor TLR2. bioRxiv : the preprint server for biology.

Shaw SC, et al. (2026) Type I interferon signaling in hematopoietic cells impairs neutrophil antibacterial function in the middle ear during viral co-infection. Cell reports. Medicine, 7(6), 102846.

Martínez-Armenta CA, et al. (2026) Evaluation of the CIB1R peptide derived from the cytoplasmic domain of neprilysin on cell migration in an in vitro model of lung cancer. Frontiers in oncology, 16, 1825515.

Boccardo S, et al. (2025) Dynamics of tissue repair regulatory T cells and damage in acute *Trypanosoma cruzi* infection. *PLoS pathogens*, 21(1), e1012906.

Giusti V, et al. (2025) Establishment and Characterization of OS-MET-R-092: A Novel Patient-Derived Cell Culture from an Osteosarcoma Bone Metastasis. *International journal of molecular sciences*, 26(21).

Pinto-Cardoso R, et al. (2025) HIF-1 α Stabilization Hampers the Chondrogenic Differentiation of Aged Bone Marrow Mesenchymal Stem Cells by Adenosine A2A/A2B Receptors Imbalance. *ACS pharmacology & translational science*, 8(7), 2075.

Murphy A, et al. (2025) Canonical microRNA loss drives tumor development implicating therapeutic efficacy of enoxacin in angiosarcoma. *bioRxiv : the preprint server for biology*.

Bessa-Andr es C, et al. (2025) Silencing P2Y12 and P2Y13 receptors rehabilitates the ADP-induced P2Y1-mediated osteogenic commitment of post-menopausal mesenchymal stromal cells. *Cell communication and signaling : CCS*, 23(1), 353.

Kenny HA, et al. (2025) Navitoclax, a Bcl-2/xL Inhibitor, and YM155, a Survivin Inhibitor, in Combination with Carboplatin, Effectively Inhibit Ovarian Cancer Tumor Growth. *Molecular cancer therapeutics*, 24(8), 1252.

Cornelissen FMG, et al. (2025) Combined Inactivation of MEK and mTOR Can Lead to Synergistic Cell Death in Glioblastoma Models and Associates with NF1 Deficiency and a Mesenchymal Subtype. *Molecular cancer therapeutics*, 24(12), 1878.

Sanches ES, et al. (2025) Methylphenidate triggers retinal oxidative stress and mitochondrial dysfunction under physiological conditions but has beneficial effects in inflammatory settings. *Neuropharmacology*, 279, 110623.

Moriarty NM, et al. (2024) Design, Synthesis, and Evaluation of Trihalomethyl Ketone Derivatives of Neocarzinil A as Improved Antimetastatic Agents. *ACS bio & med chem Au*, 4(6), 331.

Bessa-Andr es C, et al. (2024) Mechanical stimulation-induced purinome priming fosters osteogenic differentiation and osteointegration of mesenchymal stem cells from the bone marrow of post-menopausal women. *Stem cell research & therapy*, 15(1), 168.

Tang Z, et al. (2023) Aberrant elevation of FTO levels promotes liver steatosis by decreasing the m6A methylation and increasing the stability of SREBF1 and ChREBP mRNAs. *Journal of molecular cell biology*, 14(9).

Liou GY, et al. (2023) Inflammatory and alternatively activated macrophages independently induce metaplasia but cooperatively drive pancreatic precancerous lesion growth. *iScience*, 26(6), 106820.

Pan X, et al. (2022) Peptide PDHPS1 Inhibits Ovarian Cancer Growth through Disrupting YAP Signaling. *Molecular cancer therapeutics*, 21(7), 1160.

Pascual-Sabater S, et al. (2021) Preclinical testing of oncolytic adenovirus sensitivity in patient-derived tumor organoids. *STAR protocols*, 2(4), 101017.