

JUNIOR PORTABLE TUBE LUMINOMETER LB 9509

The mobile solution

The Junior is a small portable tube luminometer which can be used for all common applications using glow type bioluminescent and chemiluminescent reagents. Excellent performance, small size, low weight and battery-powered mode make it an ideal partner whenever mobility counts - in the laboratory, on site or outdoors.

The Junior can be used for a wide range of fields, including biomedical research, hygiene monitoring, process control in biotechnology, environmental monitoring (e. g. water quality) and others.

- **Research-level performance in a portable format:** Performance similar to those of benchtop tube luminometers with < 50 amol ATP/tube and a dynamic range larger than 6 orders of magnitude.
- **Always up and running:** The Junior is equipped with rechargeable batteries; spare battery sets are available, ensuring uninterrupted operation even during extended field use.
- **Fully mobile:** With a weight of only 2 kg and its small size the Junior can be easily transported to sampling sites for on-site measurements. The optional metal transport case providing space for the Junior and accessories is an ideal solution for outdoor use.



Berthold Technologies GmbH & Co. KG

Calmbacher Straße 22 · 75323 Bad Wildbad · Germany
+49 7081 1770 · bio@berthold.com · www.berthold.com



APPLICATIONS

Reporter Gene Assays

In basic research of gene regulation as well as in drug discovery and even in clinical diagnostics luciferases, β -glucuronidases, β -galactosidases and secreted alkaline phosphatases have become standard tools offering high sensitivity and wide dynamic range. Dual reporter type assays are popular as they provide an internal control for transfection efficiency or general expression level and cell viability. Chemistries with a stable light emission can be measured with the Junior by adding the reagents manually.

ATP determination

A detection limit of 50 attomol of ATP per tube makes the Junior ideally suited for the determination of cellular ATP content – an indicator of cell viability, e.g. in tumor chemosensitivity assays, cell proliferation or antibiotic susceptibility.

Hygiene Monitoring

Since all living organisms contain ATP, the ATP-dependent bioluminescence luciferase-luciferin reaction can be used to check in a fast and simple way whether surfaces, liquid or solid reactants and products are contaminated. Bioluminescent ATP detection

in hygiene monitoring offers speed (only minutes needed), convenience and sensitivity. The Junior can be used right at sample sites with any commercially available kits and reagents.

Toxicity and mutagenicity of water samples

When luminescent bacteria, e. g. *Aliivibrio fischeri*, are inoculated in water samples containing toxic substances, they lose their ability to luminesce depending on the toxicity of the water sample.

Mycoplasma detection

Viable Mycoplasma can be detected through the presence of certain enzymes which convert ADP to ATP. The ATP level can then be detected using a luciferase-luciferin reagent creating a luminescent glow.

Luminescent Immunoassay (LIA)

By exchanging chromogenic substrates of horseradish peroxidase (HRP) or alkaline phosphatase (AP) with luminogenic ones a 100-fold increase in sensitivity can be achieved. The light emission is stable over hours eliminates the need for stop solutions as used with chromogenic assays.

TECHNICAL SPECIFICATIONS

Technical data and order information Junior LB 9509

Technical Data	
Detectors	photomultiplier tube in single photon counting mode spectral range: 380 – 630 nm
Sensitivity	Standard model: <1 fmol ATP/tube High-sensitivity model: <50 amol ATP/tube
Dynamic range	6 orders of magnitude
Tube formats	Luminescence tubes, 12 x 47 mm Luminescence tubes, 12 x 55 mm Luminescence tubes, 12 x 75 mm Microcentrifuge tubes, 1, 1.5 and 2 mL Capped vials, 4 mL (14 x 54 mm)
Interface	Built-in software operated via keypad
Regulations	CE
Power Supply	110 - 230 V; 50/60 Hz; 35 VA

Temperature tolerance	storage: 0 - 40 °C operation: 15 -35 °C
Humidity	10 - 90 %, non-condensing
Dimensions	150 x 280 x 170 mm (W x D x H)
Weight	2 Kg
Order information	
32526-11	Junior LB 9509, high sensitivity
32526-10	Junior LB 9509, standard
40650	Rechargeable Batteries (pack of 3)
32700	Sturdy Metal Transport Case for storage and transport of Junior LB 9509 and accessories
32737	Adapter vials, 15x42 mm, 10 pcs.
55658-02	LB 9517 luminescence test tube for QC of Junior
Subject changes without prior notice.	

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