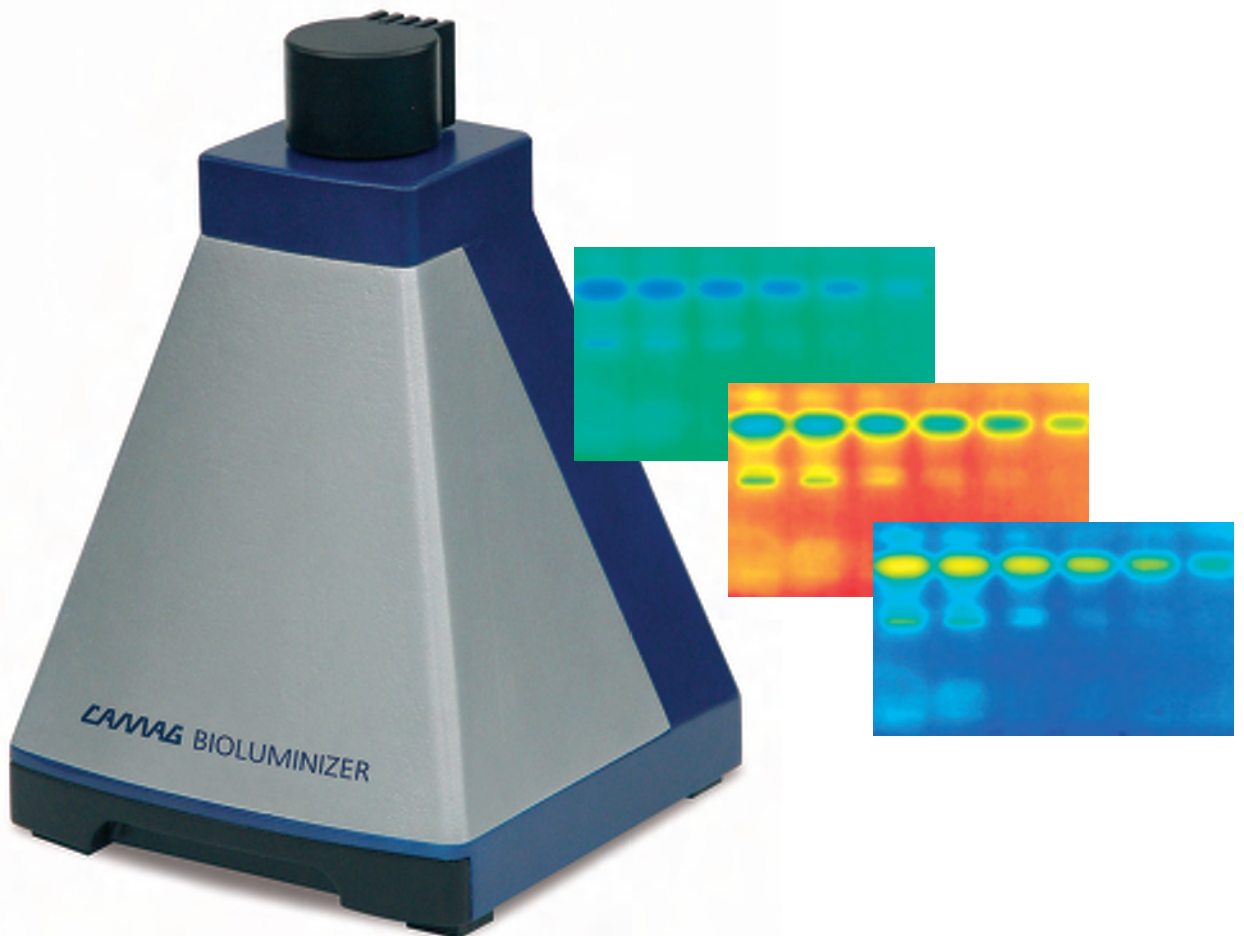


CAMMAG

World leader in Planar Chromatography

BioLuminizer™

The ultimate solution for bioluminescence detection
on HPTLC plates

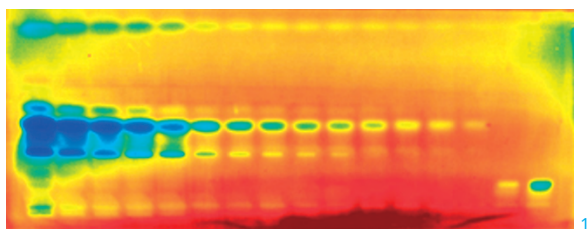


Balances sensitivity, costs and ease of use

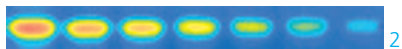
Bioluminescence and Thin-Layer Chromatography

Toxicity screening of complex mixtures following separation on a HPTLC plate is a new technique invented by Bayer. Now Chromadex has incorporated this technology into a commercial kit (Bioluminex™) utilizing the bioluminescent bacteria, *Vibrio fischeri*. Following separation detection is required.

The CAMAG BioLuminizer™ is the perfect detector for this exceptionally innovative approach!



Comparison of different substance concentrations with 2 reference tracks shown on the right side



Bioluminescence response for different toxicity levels.

The CAMAG BioLuminizer™ is designed for Bioluminescence Detection

As world leader in instrumental Thin-Layer Chromatography (TLC/ HPTLC) we know how to acquire the perfect image of a TLC separation. With this experience, we have created an optimized system for detecting bioluminescence patterns on TLC plates. The BioLuminizer™ is the system, which has been specifically designed to balance the need for sensitivity, cost effectiveness and ease of use.

State of the Art Bioluminescence Detection

The high resolution cooled CCD camera with a first grade chip of the latest generation fulfills all requirements for bioluminescence detection on TLC plates.

The main highlights are:

- Exceptionally high quantum efficiency of up to 65% allows short exposure times.
- State of the Art 16bit data acquisition detects the smallest change in intensity.
- Resolution optimized to resolve all details on the TLC plate following treatment with Bioluminex™.

Perfect Conditions for *Vibrio fischeri*

The BioLuminizer™ exclusively offers an optimized TLC plate compartment, which preserves a favorable environment for luminescent bacteria like *Vibrio fischeri*.

- No dry-out, the bacteria are kept moist and luminescent for hours.
- Stable environment allowing long term and differential measurements.
- Predictable bioluminescence activity for reproducible results.

User-friendly compact System

Take advantage of our 40 years of experience in TLC, which we have incorporated into the new BioLuminizer™.

A user-friendly system optimized for the entire TLC process with the new bioluminescence detection offers the following advantages:

- A plate holder, which enables precise positioning and user-friendly handling.
- An easy to clean setup.
- A very smart and compact system, for use in the lab as well as under field conditions.

Toxicity screening with Bioluminex™?

Your best choice for detection is CAMAG and the BioLuminizer™.

www.bioluminizer.com

Instruments for the combination of Bioluminescence with Thin-Layer Chromatography

Optimizing your TLC with the Bioluminex™ Kit

Whatever your task there are basic steps to the TLC technique. First, the samples must be applied to the plate, the plate must then be developed/ chromatographed in a chamber, and then the plate must be evaluated. This evaluation can vary from simply viewing the plate under various lights with your eyes to the detection provided by the BioLuminizer™. With toxicity screening using the Bioluminex™ kit an additional step is required: After chromatography the plate must be dipped into the kit's bioluminescence media, thereby exposing any separated bioactive compounds to the bacteria, *Vibrio fischeri*. See recommendations and instrument combinations below.

Sample Application

With the Bioluminex™ kit chromatography with highest resolution is required. Samples applied as bands provide the best resolution in TLC.

Chromatogram Development

There are two possibilities both using a CAMAG Twin Trough Chamber, one in combination with an Automatic Developing Chamber, which ensures reproducible chromatography regardless of environment and/or operator skills.

Chromatogram Immersion Device

For proper dipping of the plate into the bacteria suspension an automatic device is required.

Chromatogram Evaluation

The use of BioLuminizer™ has already been discussed but if other evaluation is desired or required such as image documentation under illumination or classical densitometry, CAMAG has the appropriate instruments for those tasks as well.



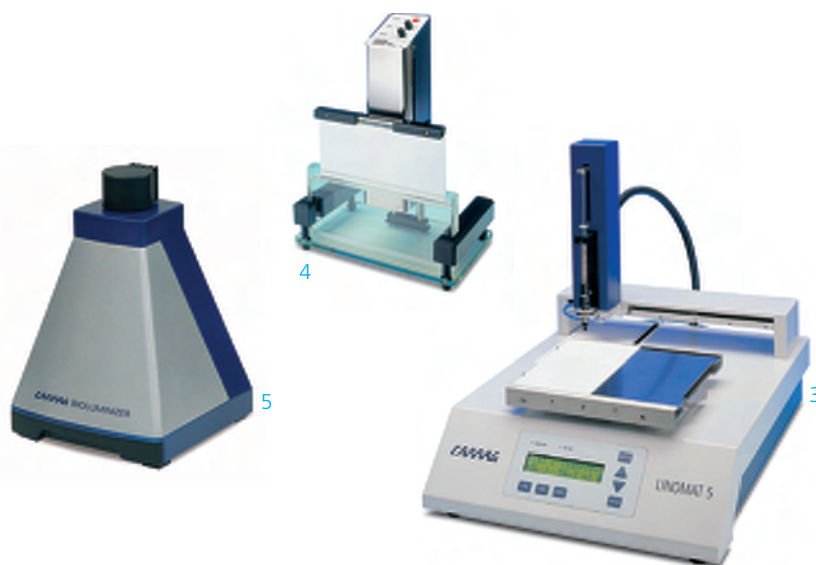
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CAMAG Instruments for additional Information

Other CAMAG instruments can be employed in parallel to the bioluminescence detection in order to complement the analytical information generated. Examples: Scanning densitometry can be used for quantitative and qualitative evaluation of light quenching zones and digital image evaluation can be used to read light differences directly from the plate.

CAMAG Basic Kit for Bioluminescence (order # 022.0240) consisting of:

- Linomat 5 for bandwise sample application (fig. 3)
- Twin Trough Chamber 20x10 cm for chromatogram development
- Immersion Device for immersing the developed HPTLC plates into the Bioluminex™ bacteria solution (or other pre-/post-chromatographic derivatization reagents (fig. 4)
- BioLuminizer™ for detection and documentation of Bioluminex™ induced inhibition zones on the HPTLC plate (fig. 5).



The following option is available to upgrade the CAMAG Bioluminescence Basic Kit:

Option A: Automatic Chromatogram Development with ADC2 and Option «Humidity Control» (order # 022.8380)

- CAMAG ADC 2 (fig. 6) for automatic development under controlled conditions, assuring highly reproducible chromatographic conditions including saturation, layer activity and drying.

Employing the ADC2 for chromatogram development makes this TLC step fully automatic, increases reproducibility and gives full control over plate activity and saturation.

Additional instruments suitable for combination with bioluminescence and TLC



Digistore 2 Documentation System for acquiring highly reproducible color Images at different Wavelengths (order # 022.9705)

- Illumination system Digistore 2 (*fig. 7*) for white light (VIS), UV254 nm and UV366 nm.
- High resolution 12 bit CCD camera with excellent linearity.
- Convenient operation via winCATS with automatic image optimization, flat field correction and annotation tools.

This sophisticated documentation system performs automatic image acquisition from HPTLC plates under visible and UV light.

Quantitative evaluation of digital chromatogram images produced with BioLuminizer™ or Digistore 2 (order # 022.9579)

- CAMAG VideoScan for quantitative evaluation of digital images of HPTLC plates.

Digital densitometry of images can be performed before and/or after immersing the plates into the Bioluminex™ solution.



Quantitative evaluation of chromatograms by scanning densitometry (order # 027.6488)

- CAMAG TLC Scanner 3 (*fig. 8*) for quantitative evaluation of HPTLC plates by scanning densitometry
 - Wavelength range 190–800 nm
 - Ultimate sensitivity (ng/pg range)
 - Monochromator for spectral selectivity.

Executing quantitative evaluation in absorption or fluorescence mode and positive identification of substances by spectra is the great advantage of scanning densitometry. Scanning will always be performed before immersing the plates into the Bioluminex™ solution.

All equipment can be used in a GLP/GMP environment and in compliance with 21CFR 11.

Sole Distributor in China and Hong Kong : NIKYANG Enterprise Limited

 Hong Kong • 852-2569 2154

Shanghai • 86-21 6351 1828

 info@nikyang.com

Guangzhou • 86-20 8329 2451

Beijing • 86-10 6527 8522

 www.nikyang.com

