TECHNICAL GUIDE

kementec

Chemiluminescent HRP Substrate

SUBSTRATES

KemiLumin Sirius and KemiLumin Vega
Cat. No. 5410 and 5420

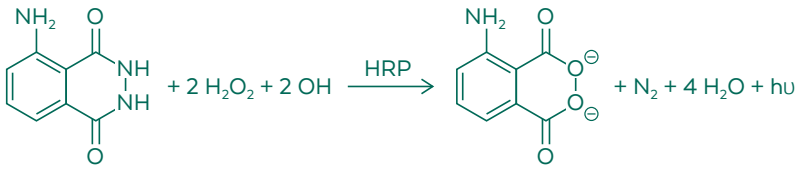
Fast, Sensitive & Reliable HRP Detection

KemiLumin Sirius and KemiLumin Vega are sensitive substrates which produce an intensive stable light, while offering a highly stable working solution, low signal to noise ratio, and low background characteristics. Both products are supplied as two components, A and B, which are to be mixed 1:1.

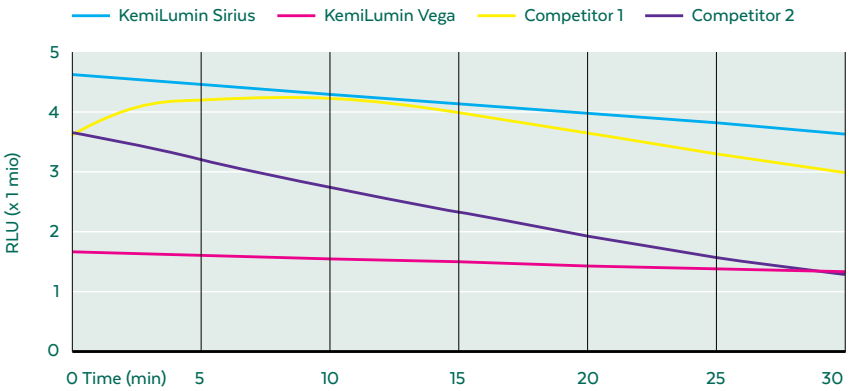
Luminol (5-amino-2,3-dihydrophthalazine-1,4-dione) is a chemiluminescence substrate for Horseradish Peroxidase (HRP). This Luminol-based chemiluminescence is a chemical reaction that produces visible blue light at λ = 425 nm, when catalyzed by the presence of HRP. Quantification of the reaction both in immunoassays and Western blotting occurs by measuring of relative light units (RLU) using a chemiluminescence reader.

Principle of chemical reaction

Overall reaction of luminol with hydrogenperoxide (H_2O_2) catalyzed by HRP creating light (hυ) and 3-aminophthalate as a byproduct.



Kinetic profile



Kinetic curves showing the development of the light reaction over a period of 30 min reaction between the Kementec KemiLumin substrates and HRP in an ELISA setup.

Key features

- Delivers high activity for HRP-based detection systems
- Broad linear measuring range for reliable quantification
- Simple preparation: mix equal parts (1:1) of the two components
- Stable working solution for easy and reliable handling at RT
- Minimal signal loss
- 3-year shelf life

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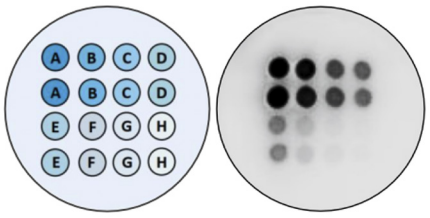
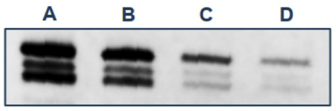


A: 40 µg/mL
B: 20 µg/mL
C: 10 µg/mL
D: 7.5 µg/mL
E: 5.0 µg/mL
F: 2.5 µg/mL
G: 1.0 µg/mL
H: 0.5 µg/mL

Application of KemiLumin Sirius in spot arrays.



A: 0.5 µg
B: 0.25 µg
C: 50 ng
D: 25 ng

Application of KemiLumin Sirius in Western Blot.

The substrate demonstrates high sensitivity over a range of analyte concentrations, providing clear and accurate chemiluminescent signals.

Applications

- Endpoint Immunoassays
- Kinetic Immunoassays
- Spot Array
- Western Blot

Tips & Tricks

- In case higher assay sensitivity is required, it is recommended to lengthen the time of development or to choose KemiLumin Sirius (Cat. No. 5410). If reduced intensity is required, it is recommended to shorten the time of development or to choose KemiLumin Vega (Cat. No. 5420).
- To eliminate cross-talk and low background signals it is recommended to use black ELISA plates.

ENVIRONMENTAL
ECO-TEK®
CONSIDERATION

Our immunoassay solutions are developed in order to create a healthy and safe work environment and preserve natural resources, while helping our customers fulfill significant regulatory requirements.

We call it ECO-TEK®

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