ELISTAR chemiluminescent substrates
for immunoassay manufacturers

Overview

ELISTAR is a line of chemiluminescent substrates for horseradish peroxidase (HRP) based immunoassays.

The use of chemiluminescent substrates is most recommended for quantitative assays requiring an extended dynamic range or qualitative assays requiring the best achievable detection limit.

ELISTAR chemiluminescent substrates are based on proprietary technologies. They offer easy-to-use formats with outstanding performance, allowing to reach excellent sensitivity, specificity, signal stability and lot-to-lot consistency. ELISTAR are ideal substrates when developing chemilunescent immunoassays, due to the different levels of sensitivity within the class.

ELISTAR substrates produce a bright signal that can be measured immediately within one minute, avoiding long incubations or the addition of stopping reagents, like in traditional colorimetric assays.

Different levels of sensitivity available for your immunoassay

Chemiluminescent substrates provide a higher degree of sensitivity than other substrates to enable lower limits of detection to be achieved in ELISA assays.

However, the increase in sensitivity requires more attention during the optimization process through the proper selection of antibody/antigen titers, blocking agents and the luminol substrate.

For this reason, Cyanagen offers a family of products with different sensitivity, allowing from picogram to femtogram detection range (Figure 1, 2).

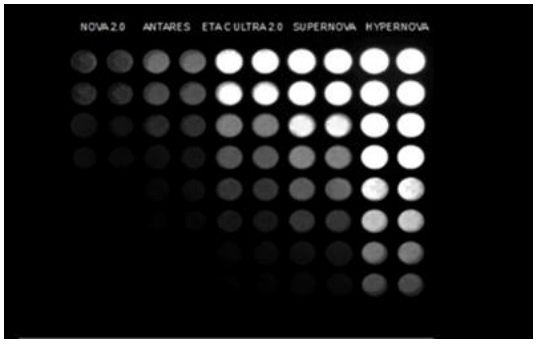

Figure 1. **ELISTAR selection guide**. Detection of 2-fold dilutions of HRP in a 96 microplate. Imager: ImageQuant™ LAS 4000 (GE Healthcare).

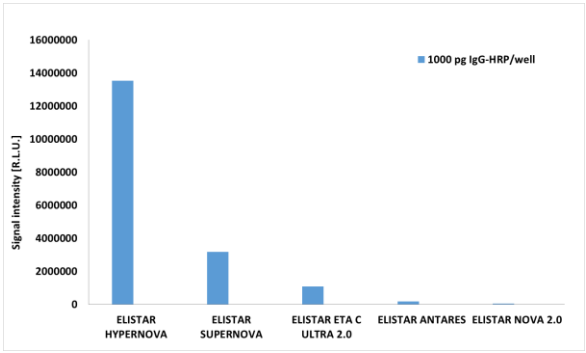

Figure 2. Different signal intensities with ELISTAR family. IgG-HRP was added to 200 µL of each ELISTAR substrate at a final concentration of 1000 pg/well. Data are the mean of at least twelve replicates. Reader: Victor^3 microplate reader (Perkin Elmer).

Moreover, our proprietary technology enables fine tuning of signal intensity in order to obtain a customized assay sensitivity best suited to meet the demands of assay manufacturers.

Among ELISTAR family the best option for superior sensitivity is ELISTAR HYPERNOVA, which is at the moment the brightest ECL substrate on the market.

Based on a new proprietary technology, ELISTAR HYPERNOVA with its extreme sensitivity and extraordinary light output allows the detection of trace amounts of proteins. The formulation provides a negligible background for an extremely high signal to noise ratio (Figure 3).

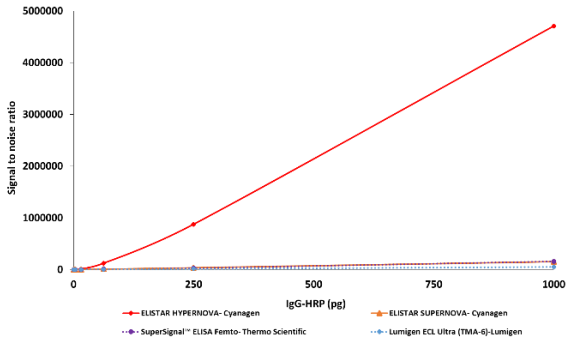

Figure 3. ELISTAR HYPERNOVA provides the highest signal to noise ratio in comparison to the top performer substrates. Four-fold dilutions of IgG-HRP (from 1000 to 0,038 pg/well) were added to either 200 µL of ELISTAR HYPERNOVA, ELISTAR SUPERNOVA, Supersignal™Elisa Femto-Thermo Scientific or Lumigen ECL Ultra (TMA-6)-Lumigen. Data are the mean of at least six replicates. Reader: Victor3 microplate reader (Perkin Elmer).

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Rev00 20191021

High lot-to-lot consistency

All ELISTAR substrates are formulated in order to assure negligible lot-to-lot variations (Figure 4), thus minimizing assay re-optimization and ensuring reproducibility.

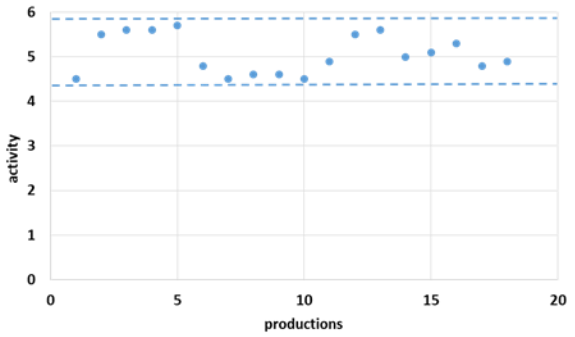

Figure 4. Lot-to-lot consistency of ELISTAR HYPERNOVA. Graph shows 18 different productions of ELISTAR HYPERNOVA, with a coefficient of variation (CV) less than 8%.

Stable working solution

All ELISTAR substrates have excellent working solution stability. The working solution is stable at + 4°C for at least three days ensuring reproducibility (Figure 5).

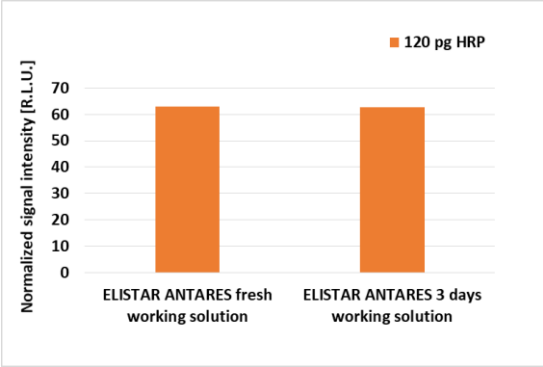

Figure 5. Working solution stability of ELISTAR HYPERNOVA at +4°C. IgG-HRP at a concentration 1000 pg/well was added to 200 µL of ELISTAR HYPERNOVA working solution either fresh or stored in an amber bottle at + 4°C for three days. The decrease in signal intensity (R.L.U.) is less than 3%. Reader: Victor3 microplate reader (Perkin Elmer)

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Storage at room temperature

ELISTAR chemiluminescent substrates have a 12 months shelf life when properly stored at room temperature.

Excellent signal stability

Signal stability is an important issue in CLIA immunoassays, in order to ensure assay reproducibility. Among ELISTAR family, ANTARES (mid-level sensitivity) and ETA C ULTRA 2.0 (mid-high level sensitivity) have an extended signal stability, with a decay < 20 % in the first 20 minutes, depending on HRP concentration (Figure 6).

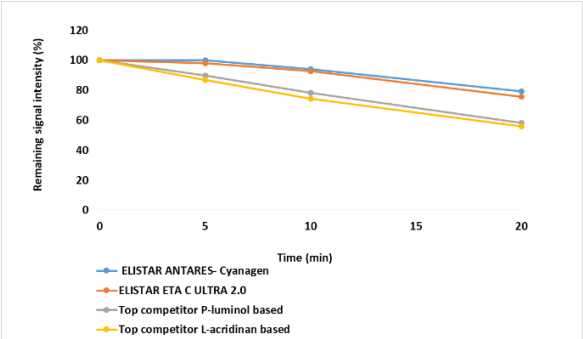

Figure 6. Signal stability of ELISTAR ANTARES and ELISTAR ETA C ULTRA 2.0. Luminescence was recorded with 1 sec integration time 5, 10 or 20 min after the addition of IgG-HRP at final concentration of 1000 pg/well. Luminometer: Victor3 microplate reader (Perkin Elmer)

Selection guide

Product	*Cat#*	*Assay sensitivity*	*Volume*
ELISTAR NOVA 2.0	**XLSE077,0100**	**Sensitive (low picograms)**	**2X50 mL**
ELISTAR ANTARES	**XLSE**	**Very Sensitive (mid femtograms)**	**2X50 mL**
ELISTAR ETA C ULTRA 2.0	**XLSE079,0100**	**Super Sensitive (low femtograms)**	**2X50 mL**
ELISTAR SUPERNOVA	**XLSE2,0100**	**Ultra Sensitive**	**2X50 mL**
ELISTAR HYPERNOVA	**XLSE**	**Extremely Sensitive**	**2X50 mL**

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