

# LigandTracer<sup>®</sup> WHITE



[www.ligandtracer.com](http://www.ligandtracer.com)

**ridgeview**  
instruments ab

# Direct detection of $^{14}\text{C}$ , $^{35}\text{S}$ and other beta emitters

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LigandTracer White detects beta-particles and can monitor  $^{14}\text{C}$  compounds binding to a cell without use of liquid scintillators. Such a non-destructive measurement makes it possible to follow e.g. small molecules with inherent labels as they interact with living cells.

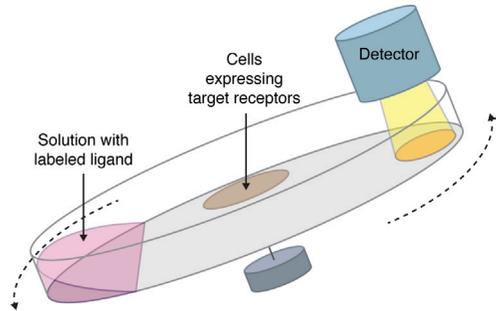
## Key features:

- Derive the affinity, on/off-rate and specificity on living cells
- Interactive self-learning package included
- Affordable, easy to use
- Maintenance free and low running costs
- Measure in incubator, room temperature or cold room
- Follow DNA synthesis using e.g.  $^{14}\text{C}$ -labeled thymidine



## Technology

Cells are seeded in a local part of a cell dish with the opposite side used as a reference to correct for background signal. The dish is placed on an inclined, slowly rotating support and liquid containing a beta emitting ligand (e.g. a protein or a small synthetic molecule) is added. Continuously following the ligand signal on the cells provides an accurate estimation of the kinetics of the interaction, without washing steps or the need to count cells.

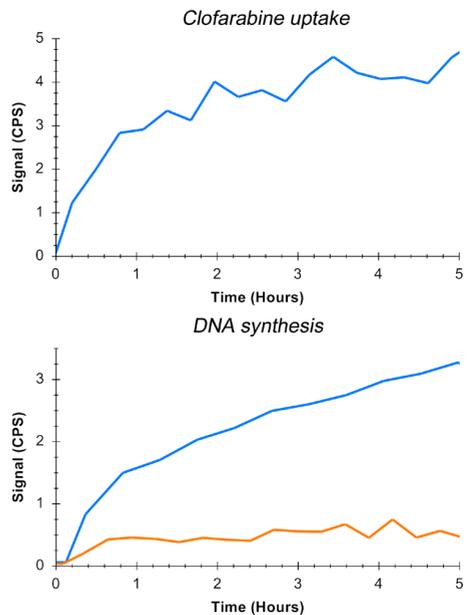


## Application Example

### Quantify DNA synthesis rate

The uptake of 10  $\mu\text{M}$  of the  $^{14}\text{C}$ -labeled nucleoside analogue clofarabine to the colon carcinoma cells HCT116 was monitored in a humidified incubator at 37  $^{\circ}\text{C}$ , using LigandTracer White (upper graph). The binding of clofarabine to DNA was followed in real-time over several hours.

DNA synthesis rate was then monitored by following the incorporation of  $^{14}\text{C}$ -thymidine over time (blue, lower graph). In the presence of 10  $\mu\text{M}$  clofarabine, the  $^{14}\text{C}$ -thymidine incorporation was greatly reduced in the HCT116 cells (orange), showing the impact of the nucleoside analogue on the DNA synthesis rate.



## Examples of publications with LigandTracer White

**The 19S deubiquitinase inhibitor b-AP15 is enriched in cells and elicits rapid commitment to cell death.**

*Wang X, Stafford W, Mazurkiewicz M, Fryknaas M, Brjnic S, Zhang X, Gullbo J, Larsson R, Arner E, D'Arcy P, Linder S.*

Mol Pharmacol. 2014. 85(6):932-945.

**Cellulose nanofiber-titania nanocomposites as potential drug delivery systems for dermal applications.**

*Galkina OL, Ivanov VK, Agafonov AV, Seisenbaeva GA, Kessler VG.*

J Mater Chem B. 2015. 3: 1688-1698.

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### SPECIFICATIONS

<b>Size</b>	0.2x0.2x0.4 m (w×h×d)
<b>Detector</b>	Solid state electron/positron detector
<b>Recommended label</b>	<sup>14</sup> C, <sup>35</sup> S, <sup>32</sup> P, <sup>33</sup> P and positron emitters (e.g <sup>18</sup> F)
<b>Noise</b>	< 0.4 counts per second (typical value)
<b>Cell dish holder</b>	Adapted for a dish diameter of 87 - 89 mm
<b>Temperature control</b>	+7 to +37 °C
<b>Accessories</b>	Delivered with a laptop computer

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### About us

Ridgeview Instruments AB is a biotechnology company that develops, markets and sells instruments in the LigandTracer series. To evaluate and understand your data we provide the software TraceDrawer, designed to extract relevant information out of your interaction data in an effective and flexible manner.

Ridgeview Instruments also has a strong track record in supporting companies in the development of software, hardware and assays. Our proven performance history in biotech business makes us a partner to rely on.