

HTRF Human IL-6 Detection Kit

Part # 62HIL06PEG & 62HIL06PEH

Test size: 500 tests (62HIL06PEG), 10,000 tests (62HIL06PEH) - assay volume: 20 μ L

Revision: #07 of September 2023

Store at: $\leq -60^{\circ}\text{C}$

This product is intended for research purposes only. The product is not intended to be used for therapeutic or diagnostic purposes.

ASSAY PRINCIPLE

Revvity's human IL6 assay is only intended for the quantitative measurement of IL6 in supernatant using HTRF[®] technology. The assay is compatible with human samples, and is highly specific for IL6.

IL6 is detected in a sandwich assay format using 2 different specific antibodies, one labeled with Europium Cryptate (donor) and the second with XL (acceptor).

The detection principle is based on HTRF[®] technology. When the labelled antibodies bind to the same antigen, the excitation of the donor with a light source (laser or flash lamp) triggers a Fluorescence Resonance Energy Transfer (FRET) towards the acceptor, which in turn fluoresces at a specific wavelength (665 nm). The two antibodies bind to the IL6 present in the sample, thereby generating FRET. Signal intensity is proportional to the number of antigen-antibody complexes formed and therefore to the IL6 concentration. (Fig. 1).

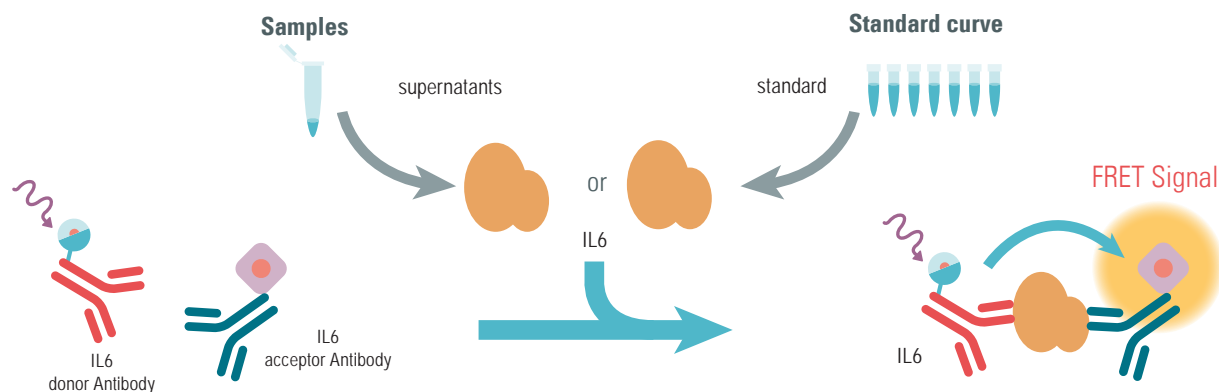
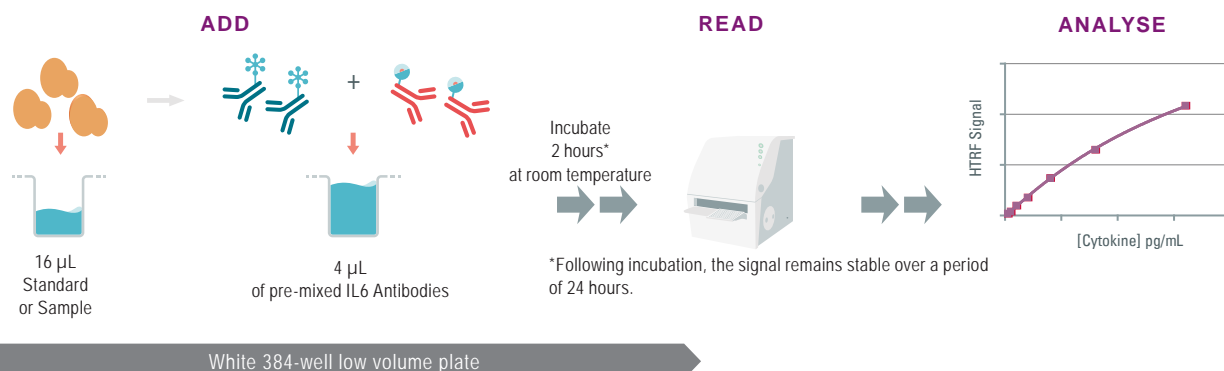


Figure 1: Principle of the HTRF IL6 sandwich assay.

MANUAL AT A GLANCE



Make sure to use the set-up for Eu^{3+} Cryptate.

For more information about set-up and compatible HTRF[®] readers, please visit our website at: www.revvity.com

MATERIALS:

KIT COMPONENTS	500 TESTS CAT # 62HIL06PEG	10,000 TESTS CAT # 62HIL06PEH
IL6 Standard Lyophilized	2 vials	2 vials
IL6 Eu Cryptate Antibody Frozen - 20 X	1 vial - 50 μ L	1 vial - 1 mL
IL6 XL Antibody Frozen - 20 X	1 vial - 50 μ L	1 vial - 1 mL
Diluent* #5 5X	1 vial 2 mL	1 vial 10 mL
Detection Buffer** #3 ready-to-use	2 vials 1.5 mL	1 vial 50 mL

* To prepare working standard solutions, culture medium can be an alternative the diluent.

** The Detection Buffer is used to prepare working solutions of acceptor and donor reagents.

FOR READING, AN HTRF®-CERTIFIED READER IS NEEDED.

For a list of HTRF-compatible readers and set-up recommendations, please visit www.revvy.com

PURCHASE SEPARATELY

96-well or 384-well small volume (SV) detection microplates - For more information about microplate recommendations, please visit our website at: www.revvy.com

STORAGE AND STABILITY

Store the kit at $\leq -60^{\circ}\text{C}$. Under appropriate storage conditions, reagents are stable until the expiry date indicated on the label.

Once reconstituted, standard stock solution may be frozen, and can be thawed only once..

Once thawed, antibody solutions can be frozen once.

To avoid freeze/thaw cycles, it is recommended to dispense remaining stock solutions into disposable plastic vials for storage at $\leq -60^{\circ}\text{C}$.

Volume of standard and antibody aliquots should not be under 10 μ L.




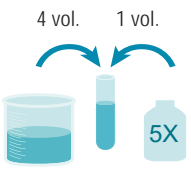
Thawed diluent and detection buffer can be stored at 2-8 $^{\circ}\text{C}$ on your premises.

REAGENT PREPARATION**BEFORE YOU BEGIN:**

- It is very important to prepare reagents in the specified buffers. The use of an incorrect diluent may affect reagent stability and assay results.
- Thaw the frozen reagents at room temperature.
- Before use, allow all kit's reagents to warm up at room temperature then
 - homogenize buffer and diluent with a vortex
 - centrifuge (NEVER vortex) the antibodies to gather all liquid at the bottom of the vial
- It is recommended to filter buffers before use.
- Antibody solutions must be prepared in individual vials and can be mixed prior to dispensing.

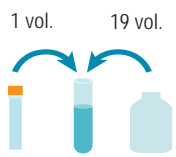
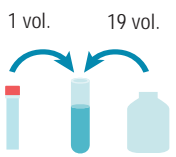
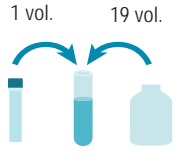
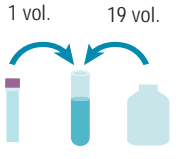
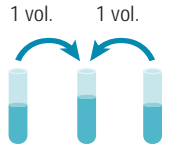
TAKE CARE TO PREPARE STOCK AND WORKING SOLUTIONS ACCORDING TO THE DIRECTIONS FOR THE KIT SIZE YOU HAVE PURCHASED.

TO PREPARE DILUENT, STANDARD & ANTIBODY STOCK SOLUTIONS:

500 TESTS			10,000 TESTS
IL6 Eu Cryptate antibody			
Thaw the IL6 Eu Cryptate antibody. Centrifuge. This 20 X stock solution can be frozen and stored at $\leq -60^{\circ}\text{C}$.			Thaw the IL6 Eu Cryptate antibody. Centrifuge. This 20 X stock solution can be frozen and stored at $\leq -60^{\circ}\text{C}$.
IL6 XL antibody			
Thaw the IL6 XL antibody. Centrifuge. This 20 X stock solution can be frozen and stored at $\leq -60^{\circ}\text{C}$.			Thaw the IL6 XL antibody. Centrifuge. This 20 X stock solution can be frozen and stored at $\leq -60^{\circ}\text{C}$.
IL6 Standard			
Reconstitute the IL6 standard with distilled water. Volume of reconstitution is indicated on the vial label. The reconstituted standard solution can be frozen and stored at -60°C or below.			Reconstitute the IL6 standard with distilled water. Volume of reconstitution is indicated on the vial label. The reconstituted standard solution can be frozen and stored at -60°C or below
Diluent			
Dilute 5-fold the 5 X diluent #5 with distilled water: Homogenize the 5 X diluent #5 with a vortex and add 1 volume of stock solution in 4 volumes of distilled water e.g. 1 mL of diluent + 4 mL of distilled water Mix gently after dilution.			Dilute 5-fold the 5 X diluent #5 with distilled water: Homogenize the 5 X diluent #5 with a vortex and add 1 volume of stock solution in 4 volumes of distilled water e.g. 10 mL of diluent + 40 mL of distilled water Mix gently after dilution.

TO PREPARE WORKING ANTIBODY SOLUTIONS:

Each well requires 4 μL of pre-mixed IL6 antibodies. Prepare the two antibody solutions in separate vials.

500 TESTS			10,000 TESTS
IL6 Eu Cryptate antibody			
Dilute 20-fold the 20 X stock solution (thawed reagent) of IL6 Eu Cryptate antibody with detection buffer #3: e.g. 10 μL of thawed Eu Cryptate antibody stock solution + 190 μL of detection buffer.			Dilute 20-fold the 20 X stock solution (thawed reagent) of IL6 Eu Cryptate antibody with detection buffer #3: e.g. 10 μL of thawed Eu Cryptate antibody stock solution + 190 μL of detection buffer).
IL6 XL antibody			
Dilute 20-fold the 20 X stock solution (thawed reagent) of IL6 XL antibody with detection buffer #3: e.g. 10 μL of thawed XL antibody stock solution + 190 μL of detection buffer.			Dilute 20-fold the 20 X stock solution (thawed reagent) of IL6 XL antibody with detection buffer #3: e.g. 10 μL of thawed XL antibody stock solution + 190 μL of detection buffer.
Antibody mix			
Pre-mix the two ready-to-use antibody solutions just prior to dispensing the reagents: e.g. 200 μL of XL antibody + 200 μL of Eu Cryptate antibody			Pre-mix the two ready-to-use antibody solutions just prior to dispensing the reagents: e.g. 200 μL of XL antibody + 200 μL of Eu Cryptate-antibody

TO PREPARE WORKING STANDARD SOLUTIONS:

- Each well requires 16 μL of standard.
- Serially dilute the standard stock solution with diluent #5 or with the cell culture medium used to prepare your samples, supplemented with BSA or 10% FCS.
- Due to the stability of the IL6, it is mandatory to prepare the standard curve just before the assay.
- In order to check for a potential interference effect from your own assay buffer when using the assay for the first time, we highly recommend the parallel preparation of a standard curve in your own supplemented cell culture medium and in diluent.
- In order to counteract any standard sticking, we recommend changing tips between each dilution.

A recommended standard dilution procedure is listed and illustrated below:

1. Reconstitute the standard vial with the volume indicated on the vial label using distilled water.

2. Prepare the following dilutions:

- Dilute the reconstituted standard stock solution 3-fold with diluent or with cell culture medium.

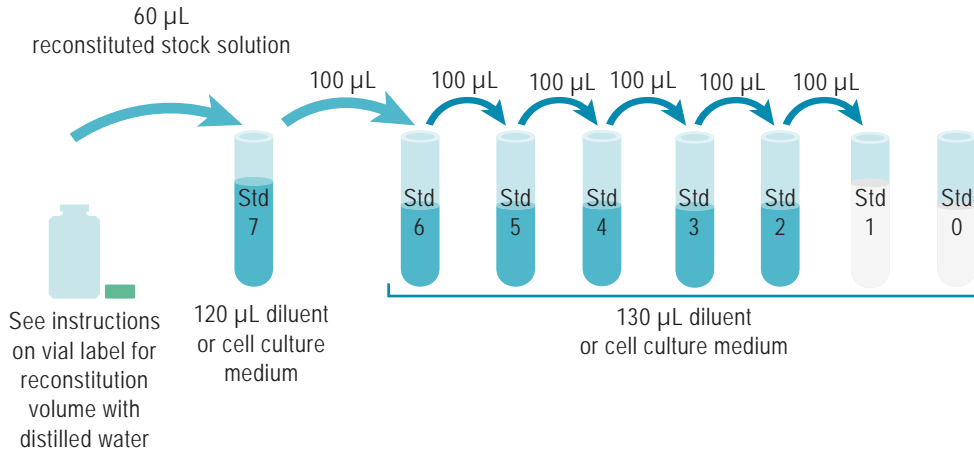
In practice: take 60 μL of stock solution and add it to 120 μL of diluent or cell culture medium. Mix gently. This yields the high standard (Std 7: 7500 pg/mL) for the top of the curve.

- Use the high standard (Std 7) to prepare the standard curve using serial dilutions as follows:

- Dispense 130 μL of diluent or cell culture medium into each vial from Std 6 to Std 0

- Add 100 μL of standard to 130 μL of diluent or cell culture medium, mix gently and repeat the serial dilution to make standard solutions: std6, std5, std4, std3, std2, std1

This will create 7 standards for the analyte. Std 0 (Negative control) is diluent or appropriate culture medium alone.



STANDARD	SERIAL DILUTIONS	WORKING SOLUTIONS
Standard Stock solution	Reconstitute the vial following the indications given on the vial label	22.5 ng/mL
Standard 7	60 μL reconstituted standard stock solution + 120 μL diluent	7500 pg/mL
Standard 6	100 μL Standard 7 + 130 μL diluent	3260.9 pg/mL
Standard 5	100 μL Standard 6 + 130 μL diluent	1417.8 pg/mL
Standard 4	100 μL Standard 5 + 130 μL diluent	616.4 pg/mL
Standard 3	100 μL Standard 4 + 130 μL diluent	268 pg/mL
Standard 2	100 μL Standard 3 + 130 μL diluent	116.5 pg/mL
Standard 1	100 μL Standard 2 + 130 μL diluent	50.7 pg/mL
Standard 0	130 μL diluent	0

TO PREPARE SAMPLES:

- Each well requires 16 μL of sample.
- Just after their collection, store the samples at 4°C and test them immediately. For later use, samples should be dispensed into disposable plastic vials and stored at $\leq -60^\circ\text{C}$. Avoid multiple freeze/thaw cycles.
- All samples with a concentration above the highest standard (Std 7) must be diluted in diluent #5 or in your cell culture medium.

1. Calculate the ratio of the acceptor and donor emission signals for each individual well.

$$\text{Ratio} = \frac{\text{Signal 665 nm}}{\text{Signal 620 nm}} \times 10^4$$

2. Calculate the delta ratio of the acceptor and donor emission signals for each individual well. The Standard 0 (Negative control) plays the role of an internal assay control.

$$\text{delta Ratio} = \text{Ratio Standard or sample} - \text{Ratio Standard 0}$$

3. Calculate the % CVs. The mean and standard deviation can then be worked out from ratio replicates.

$$\text{CV (\%)} = \frac{\text{Standard deviation}}{\text{Mean Ratio}} \times 100$$

For more information about data reduction, please visit www.revvy.com

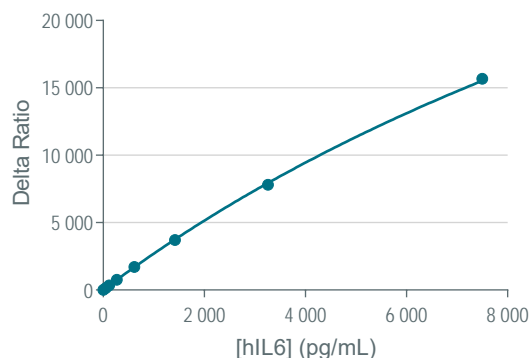
RESULTS

This data must not be substituted for the data obtained in the laboratory, and should be considered only as an example. Results may vary from one HTRF® compatible reader to another.

Standard curve fitting with the 4 Parameter Logistic (4PL 1/y²)* model

* For more information about curve fitting please visit www.revvy.com

		Ratio (1)	delta R (2)	CV% (3)
Standard 0	Negative control	678	0	1%
Standard 1	50.7 pg/mL	819	140	5%
Standard 2	116.5 pg/mL	1019	341	1%
Standard 3	268 pg/mL	1434	756	1%
Standard 4	616.4 pg/mL	2386	1708	1%
Standard 5	1417.8 pg/mL	4394	3716	1%
Standard 6	3260.9 pg/mL	8480	7802	1%
Standard 7	7500 pg/mL	16348	15670	1%



ANALYTICAL ASSAY PERFORMANCE

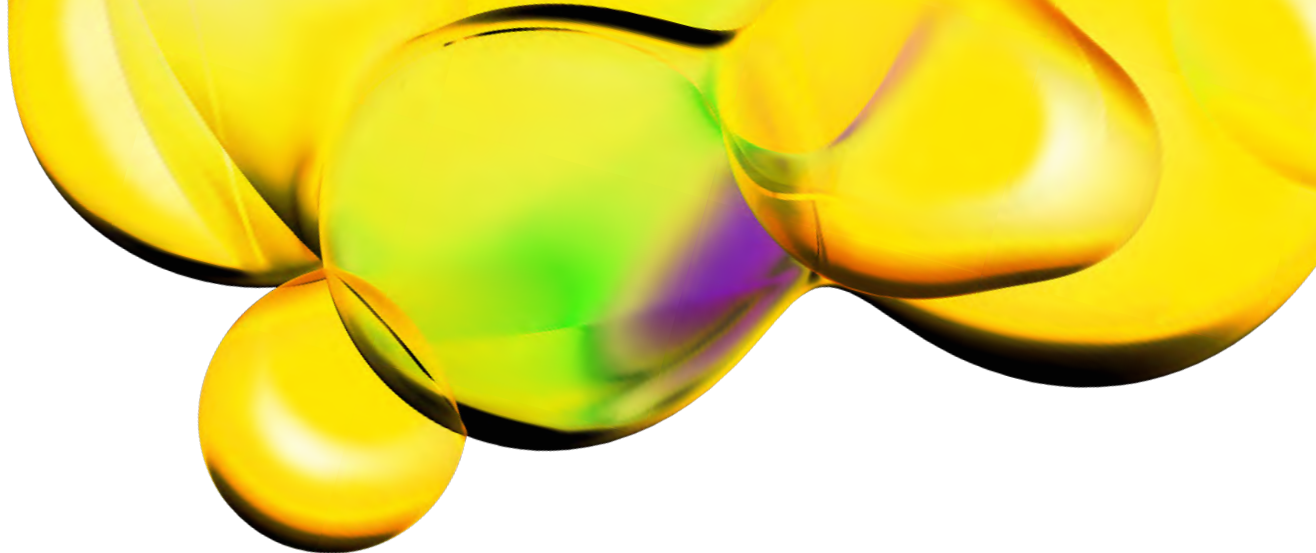
	Diluent	DMEM	RPMI
Assay range (pg/mL**)	34 pg/mL to 7500 pg/mL		
Limit of detection (LoD*) = Std 0 mean + 2 SD	7.6 pg/mL	19.5 pg/mL	22.7 pg/mL
Limit of quantification (LoQ*)	34 pg/mL		
Incubation time	2 hours at room temperature		

**NIBSC (89/548) value (IU/mL) = 0,1 x HTRF hIL6 value (pg/mL)

* The analytical sensitivity was calculated from data obtained with an HTRF compatible reader after 2 hours incubation, this may vary from one HTRF compatible reader to another.

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The use of the cell line will be done with appropriate safety and handling precautions to minimize health and environmental impact.



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Revvity, Inc.
940 Winter Street
Waltham, MA 02451 USA
www.revvity.com

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