



## **IGF-2 ELISA Kit Instructions**

For the quantitative determination of IGF-2 in  
human serum, plasma, urine, cerebrospinal fluid, saliva,  
and cell culture supernatants

**Catalog #80575  
96 Assays**

**For research use only. Not for use in diagnostic procedures.**

Crystal Chem, Inc.  
955 Busse Road  
Elk Grove Village, IL 60007, USA  
Tel: (630) 889-9003 Fax: (630) 889-9021  
E-mail: [sales@crystalchem.com](mailto:sales@crystalchem.com)  
Order online: [www.crystalchem.com](http://www.crystalchem.com)

## Catalog #80575

### TABLE OF CONTENTS

A. <i>Intended Use</i> .....	1
B. <i>Introduction</i> .....	1
C. <i>Principles of the Assay</i> .....	1
D. <i>Kit Storage</i> .....	1
E. <i>Assay Materials</i>	
E.1. <i>Materials provided</i> .....	1
E.2. <i>Materials to be supplied by user</i> .....	2
F. <i>Assay Precautions</i> .....	2
G. <i>Maximizing Kit Performance</i> .....	2
H. <i>Sample Collection</i> .....	2
I. <i>Assay Procedure</i>	
I.1. <i>Preparation of reagents</i> .....	2
I.2. <i>Dilution of samples and controls</i> .....	3
I.3. <i>Assay procedure</i> .....	3
I.4. <i>Determining the IGF-2 concentration</i> .....	4
J. <i>Performance characteristics</i>	
J.1. <i>Assay range</i> .....	4
J.2. <i>Precision</i> .....	4
Warranty .....	4

**A. Intended Use**

The IGF-2 ELISA kit is for the quantitative determination of IGF-2 in human serum, plasma, urine, cerebrospinal fluid, saliva, and cell culture supernatants. Please read the complete kit insert before performing this assay. The kit is for RESEARCH USE ONLY. It is not intended for use in diagnostic procedures.

**B. Introduction**

IGF-2 (Insulin-like Growth Factor-2) plays a critical role in regulating the proliferation and differentiation of many cell types. IGF-2 is a growth regulator, particularly in fetal growth.

**C. Principle of the Assay**

The IGF-2 ELISA kit is an ELISA sandwich assay for human IGF-2. It utilizes two specific and high affinity antibodies for this protein. IGF-2 is first dissociated from the IGFBPs via an acidic buffer. The excess IGF-1 occupies the IGF-binding sites of the binding proteins, thus allowing the measurement of resulting free IGF-2. The IGF-2 in the human sample binds to the first antibody coated on the microtiter plate. In the following step after washing, a biotinylated anti-IGF-2 antibody binds to the immobilized IGF-2. A Streptavidin-Peroxidase conjugated is added that binds, in turn, to the biotinylated antibody. In the closing substrate reaction, the IGF-2 levels of the samples can be measured by color intensity.

**D. Kit Storage**

1. Upon receipt of the IGF-2 ELISA kit, store it at 2-8°C and avoid light exposure (do not freeze the kit or hold it at temperatures above 25°C).
2. The kit should not be used after the expiration date.

**E. Assay Materials****E.1. Materials provided****TABLE 1 Contents of the kit**

Mark	Description	Amount
MIC	Antibody-coated Microplate (12 x 8)	1 pack
STD1-5	Standards (Lyophilized)	1 x 5 vials
DIL	Dilution Buffer	1 x 125 mL
CON1-2	Controls (Lyophilized)	1 x 2 vials
AB CONJ	Antibody Conjugate	1 x 6 mL
ENZ CONJ	Enzyme Conjugate	1 x 12 mL
WASH	Wash Buffer (20X Concentrate)	1 x 50 mL
SUB	Substrate Solution	1 x 12 mL
STOP	Stop Solution	1 x 12 mL
	Sealing tape for plate	2x, adhesive



**E.2. Materials required but not provided**

Micropipettes and disposable tips  
Distilled or deionized water  
Polypropylene microtubes  
Volumetric flasks  
Vortex mixer  
Microplate shaker (350 rpm)  
Microplate reader (capable of reading  $A_{450}$  and  $A_{630}$  values)

**F. Assay Precautions**

1. Only appropriately-trained personnel should use the kit. Laboratory personnel should wear suitable protective clothing. All chemicals and reagents should be considered potentially hazardous. Avoid ingestion and contact with skin and eyes.
2. Some assay components may contain human sourced materials. Accordingly, all assay components should be handled as if potentially infectious using safe laboratory procedures.
3. Do not use the reagents after the expiration date.
4. Reagents are light sensitive and should be protected from sunlight.

**G. Maximizing Kit Performance**

1. Given the small sample volumes required (5  $\mu$ L), pipetting should be done as carefully as possible. A high quality 10  $\mu$ L or better precision pipette should be used for such volumes. Drops of liquid adhering to the outside of the pipette tips should be removed by wiping to ensure the highest degree of accuracy.
2. In order to prevent the microplate wells from drying out and to get the best results, samples and reagents should be dispensed quickly into the wells.
3. Each standard and sample should be assayed in duplicate.
4. The same sequence of pipetting and other operations should be maintained in all procedures.
5. Do not mix reagents that have different lot numbers.

**H. Sample Collection**

Serum and plasma samples collected with EDTA, Citrate, or Heparin anticoagulant can be used. Undiluted samples should be chilled as soon as possible after sample withdrawal. Collect urine, cerebrospinal fluid, and saliva using standard methods and store in low concentrations (at least 1:10 dilution). Cell culture media should be stored with at least a 1:5 dilution with 5% FCS. For longer term storage, samples can be stored at  $-20^{\circ}\text{C}$ . Avoid repeated freeze-thaw cycles of samples. IGF-2 concentrations in body fluids and cell culture media may deviate from serum values.

**I. Assay Procedure**

**I.1. Preparation of reagents**

1. Antibody-coated microplate  
Provided as ready to use. Protect from moisture.
2. Standards 1-5

Standards are provided in lyophilized form with concentrations ranging from 0.45 ng/mL to 9 ng/mL. Dilute each standard with 0.5 mL of Dilution Buffer (marked "DIL"). After reconstitution, it is recommended that standards be allowed to sit for 15 mins at room temperature and then mixed thoroughly but gently with a Vortex mixer. Reconstituted standards are stable for three months at  $-20^{\circ}\text{C}$ . Standards should not be repeatedly thawed (at most, three times), so standards should be appropriately aliquoted in appropriate volumes prior to

being frozen. Standards are provided in the following concentrations: 0.45, 1.5, 3, 5.63, and 9 ng/mL.

3. Dilution Buffer  
Provided as ready to use.
4. Controls 1-2  
Controls are provided in lyophilized form with target value and ranges included on their labels. Reconstitute controls with 250  $\mu$ L of Dilution Buffer. Reconstituted controls are stable for three months at -20°C. Reconstituted controls should not be repeatedly thawed (at most, three times).
5. Antibody Conjugate  
Provided as ready to use.
6. Enzyme Conjugate  
Provided as ready to use.
7. Wash Buffer (20X Concentrated)  
The wash buffer has to be diluted 1:20 with distilled or deionized water prior to use. For example, 50 mL of wash buffer must be diluted with 950 mL of distilled or deionized water. Wash buffer is stable for 4 weeks at 2-8°C after dilution, so dilute only as needed.
8. Substrate Solution  
Provided as ready to use.
9. Stop Solution  
Provided as ready to use.

#### I.2. Dilution of samples and controls

1. Samples and controls need to be diluted with Dilution Buffer for use with the assay. Please note that this section only applies to samples and controls, not standards. A sample dilution of 1:401 using 5  $\mu$ L of sample is generally suitable for serum and plasma samples. Allow diluted samples to incubate at room temperature for at least 15 minutes. Reconstituted controls should be diluted in the same ratio as the samples. Samples and controls must be used within 2 hours once diluted.

Since IGF-2 levels can vary, dilution ratio may need to be adjusted as appropriate.

#### I.3. Assay procedure

Prior to running the assay, all reagents should be brought to room temperature for at least 30 minutes. Reagents should be stored at 2-8°C immediately after use. Before use, mix the reagents thoroughly by gentle agitation or swirling.

1. Add 50  $\mu$ L of Antibody Conjugate in all wells to be used.
2. In the desired well, add 50  $\mu$ L of diluted sample or 50  $\mu$ L of standard or 50  $\mu$ L of diluted control and mix well by repeated pipetting.  
**Note:** A blank using 50  $\mu$ L of Dilution Buffer is recommended.
3. Cover the wells with sealing tape and incubate the plate for 2 hour at room temperature (shake at 350 rpm).
4. Aspirate well contents and wash five times using 300  $\mu$ L of Wash Buffer per well. After each wash, remove any remaining solution by inverting and tapping the plate firmly on a clean paper towel.
5. Add 100  $\mu$ L of the Enzyme Conjugate in each well.
6. Cover the wells with sealing tape and incubate the plate for 30 minutes at room temperature (shake at 350 rpm).



7. Aspirate well contents and wash five times using 300  $\mu$ L of Wash Buffer per well. After each wash, remove any remaining solution by inverting and tapping the plate firmly on a clean paper towel.
8. Add 100  $\mu$ L of Substrate Solution in each well.
9. Incubate the plate for 30 mins in dark room at room temperature.
10. Stop the reaction by adding 100  $\mu$ L of Stop Solution.
11. Measure absorbance within 30 minutes using a plate reader (measure  $A_{450}$  values and subtract  $A_{630}$  values).

#### I.4. Determining the IGF-2 concentration

1. Using computer software, construct the IGF-2 calibration curve by plotting the mean change in absorbance value for each calibrator (incl. blank) on the Y axis versus the corresponding IGF-2 concentration on the X axis. A higher-grade polynomial, four parametric logistic (4-PL) curve fit, or non-linear regression are suitable for the evaluation.

**Note:** A calibration curve should be plotted every time the assay is performed.

2. IGF-2 concentrations in the samples are interpolated using the calibration curve and mean absorbance values for each sample. For diluted samples and controls, the values obtained must be multiplied by the dilution factor to obtain the final IGF-2 concentration. The IGF-2 concentration is expressed in ng/mL.

**Note:** Samples with high IGF-2 concentrations (ie. fall above the range of the assay) should be further diluted with the dilution buffer and rerun.

#### J. Performance characteristics

##### J.1. Assay range

The IGF-2 ELISA Kit has an assay range from 0.45 – 9 ng/mL. The analytical sensitivity of the assay is 0.02 ng/mL.

##### J.2. Precision

The assay has a within-run and total precision of CV < 10%.

#### Warranty

Crystal Chem Inc. makes no warranty of any kind, either expressed or implied, except that the materials from which its products are made are of standard quality. Buyer assumes all risk and liability resulting from the use of this product.

**THERE IS NO WARRANTY OF MERCHANTABILITY OF THE PRODUCTS, OR THAT SUCH PRODUCTS ARE FIT FOR ANY PARTICULAR PURPOSE. CRYSTAL CHEM INC'S LIABILITY SHALL NOT EXCEED THE RETURN OF THE PURCHASE PRICE, AND UNDER NO CIRCUMSTANCES SHALL CRYSTAL CHEM INC. BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES, OR EXPENSES ARISING DIRECTLY OR INDIRECTLY FROM THE USE OF THIS PRODUCT.**



# TOP ASSAYS FOR HUMAN SAMPLES

BROWSE OUR MOST POPULAR PRODUCTS

Cat #	Product Name	Assay Range	Sensitivity	Sample Size	Sample Type
80571	Adiponectin Human ELISA	2 - 100 ng/mL	0.6 ng/mL	10 µL	Plasma, Serum
80269	Bile Acids Human Total Assay	0 - 180 µmol/L	N/A	20 µL	Plasma, Serum
80954	C-Peptide Human ELISA	0.37 - 15 ng/mL	0.37 ng/mL	25 µL	Plasma, Serum
80189	Creatinine Human Assay	0.15 - 141 mg/dL	0.15 mg/dL	8 µL	Serum, Urine
81509	GIP Active Human ELISA	0.78 - 50 pM	0.78 pM	50 µL	Plasma, Cell Culture
81515	GIP Human ELISA	3.1 - 200 pM	3.1 pM	50 µL	Plasma, Cell Culture
81506	GLP-1 Human ELISA	1.24 - 300 pM	1.24 pM	25 µL	Plasma, Cell Culture
81512	GLP-2 Human ELISA	0.41 - 100 ng/mL	0.41 ng/mL	25 µL	Plasma, Serum
81520	Glucagon Human ELISA	7.8 - 500 pg/mL	1.1 pg/mL	10 µL	Plasma, Serum, Cell Culture
81696	Glucose Human ELISA	0 - 675 mg/dL	N/A	2 µL	Plasma, Serum, Urine
80059	HDL Cholesterol Human Assay	1.1 - 184 mg/dL	1.1 mg/dL	3 µL	Plasma, Serum
80099	Hemoglobin A1c Human Assay	4.0 - 12.0%	4.0%	10 µL	Whole Blood
80494	Homocysteine Human Assay	4 - 40 µmol/L	4 µmol/L	20 µL	Plasma, Serum
80572	IGF-1 Human ELISA	2 - 50 ng/dL	0.09 ng/mL	10 µL	Plasma, Serum, Cell Culture
80575	IGF-2 Human ELISA	0.45 - 9 ng/mL	0.02 ng/mL	5 µL	Plasma, Serum, Cell Culture, Fluids, Saliva
80576	IGFBP-1 Human ELISA	0.1 - 8 ng/mL	0.02 ng/mL	20 µL	Plasma, Serum, Cell Culture, Fluids, Saliva
80577	IGFBP-2 Human ELISA	2 - 80 ng/mL	0.2 ng/mL	10 µL	Plasma, Serum, Cell Culture, Fluids, Saliva
80580	IGFBP-3 Human ELISA	0.4 - 30 ng/mL	0.018 ng/mL	5 µL	Plasma, Serum
90095	Insulin Human ELISA	0.9 - 200 mU/L	0.25 mU/L	25 µL	Plasma, Serum
80069	LDL Cholesterol Human Assay	1.7 - 250 mg/dL	1.7 mg/dL	3 µL	Plasma, Serum
80970	Plasma Renin Activity Human ELISA	0.15 - 60 ng/mL Ang-I	0.15 ng/mL Ang-I	50 µL	Plasma
80968	Leptin Human ELISA	1 - 100 ng/mL	0.42 ng/mL	20 µL	Serum
90105	Proinsulin Intact Human ELISA	0.3 - 100 pmol/L	0.3 pmol/L	50 µL	Plasma, Serum
90110	Proinsulin Total Human ELISA	0.5 - 220 pmol/L	0.5 pmol/L	50 µL	Plasma, Serum
90340	Vitamin D (25-OH) Total Human ELISA	5 - 180 ng/mL	3 ng/mL	50 µL	Serum

Learn more and order at [www.crystalchem.com](http://www.crystalchem.com)