

Mouse IP-10 ELISA Kit

Enzyme-linked Immunosorbent Assay for quantitative detection of mouse IP-10

Catalog Numbers BMS6018 and BMS6018TEN

Pub. No. MAN0016679 **Rev.** A.0 (30)

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from thermofisher.com/support.

Product description

The Mouse IP-10 ELISA Kit is an enzyme-linked immunosorbent assay for the quantitative detection of mouse IP-10.

Summary

IP-10 is a member of the CXC subfamily of chemokines expressed by monocytes. It plays a pivotal role in immune system development and deployment. The Interferon- γ inducible protein -10kD (IP-10) displays pleiotropic functions including stimulation of monocytes, natural killer and T-cell migration, regulation of T-cell and bone marrow progenitor maturation, modulation of adhesion molecule expression as well as inhibition of angiogenesis.

Through this inhibitory effect on neovascularization IP-10 exhibits anti-tumoral effects. It shares a common receptor, CXCR3, with the chemokine MIG, but has been shown to play a distinct role in host defense in infections. IP-10 is further involved in allergic contact dermatitis reactions and other allergic diseases. It appears during immune-mediated processes, in inflammation of the nervous system and in Alzheimer's disease.

For literature update refer to our website.

Principles of the test

An anti-mouse IP-10 coating antibody is adsorbed onto microwells.

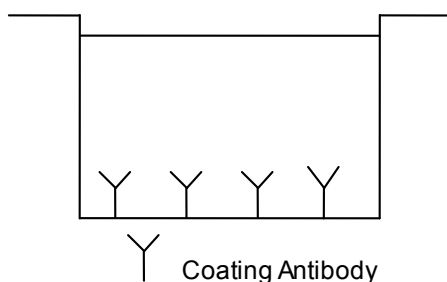


Fig. 1 Coated microwell

Mouse IP-10 present in the sample or standard binds to antibodies adsorbed to the microwells. A biotin-conjugated anti-mouse IP-10 antibody is added and binds to mouse IP-10 captured by the first antibody.

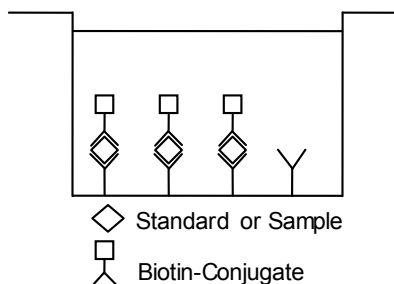


Fig. 2 First incubation

Following incubation unbound biotin-conjugated anti-mouse IP-10 antibody is removed during a wash step. Streptavidin-HRP is added and binds to the biotin-conjugated anti-mouse IP-10 antibody.

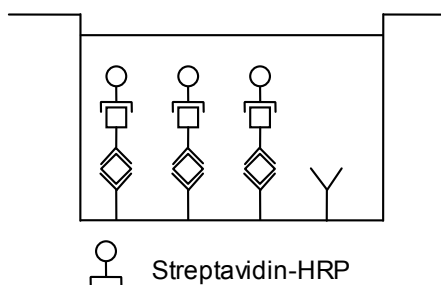


Fig. 3 Second incubation

Following incubation unbound Streptavidin-HRP is removed during a wash step, and substrate solution reactive with HRP is added to the wells.

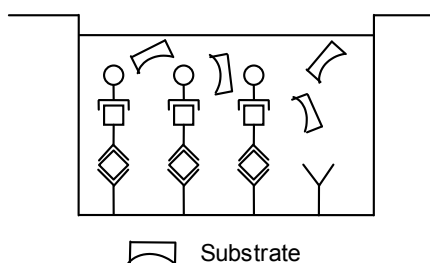


Fig. 4 Third incubation

A colored product is formed in proportion to the amount of mouse IP-10 present in the sample or standard. The reaction is terminated by addition of acid and absorbance is measured at 450 nm. A standard curve is prepared from 7 mouse IP-10 standard dilutions and mouse IP-10 sample concentration determined.

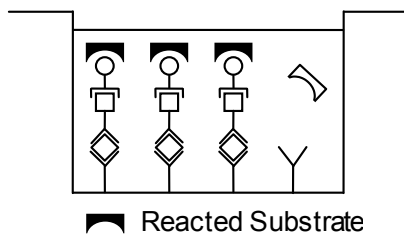


Fig. 5 Stop reaction

Reagents provided

Reagents for mouse IP-10 ELISA BMS6018 (96 tests)

1 aluminum pouch with a Microwell Plate (12 strips of 8 wells each) coated with polyclonal antibody to mouse IP-10

1 vial (70 μ L) Biotin-Conjugate anti-mouse IP-10 polyclonal antibody

1 vial (150 μ L) Streptavidin-HRP

2 vials mouse IP-10 Standard lyophilized, 1000 pg/mL upon reconstitution

1 vial (12 mL) Sample Diluent

1 vial (5 mL) Assay Buffer Concentrate 20x (PBS with 1% Tween™ 20, 10% BSA)

1 bottle (50 mL) Wash Buffer Concentrate 20x (PBS with 1% Tween™ 20)

1 vial (15 mL) Substrate Solution (tetramethyl-benzidine)

1 vial (15 mL) Stop Solution (1M Phosphoric acid)

4 Adhesive Films

Reagents for mouse IP-10 ELISA BMS6018TEN (10x96 tests)

10 aluminum pouches with a Microwell Plate (12 strips of 8 wells each) coated with polyclonal antibody to mouse IP-10

10 vials (70 μ L) Biotin-Conjugate anti-mouse IP-10 polyclonal antibody 10 vials (150 μ L) Streptavidin-HRP

10 vials mouse IP-10 Standard lyophilized, 1000 pg/mL upon reconstitution

7 vials (12 mL) Sample Diluent

2 vials (5 mL) Assay Buffer Concentrate 20x (PBS with 1% Tween™ 20, 10% BSA)

6 bottles (50 mL) Wash Buffer Concentrate 20x (PBS with 1% Tween™ 20)

10 vials (15 mL) Substrate Solution (tetramethyl-benzidine)

1 vial (100 mL) Stop Solution (1M Phosphoric acid) 20 Adhesive Films

Storage instructions – ELISA kit

Store kit reagents between 2°C and 8°C. Immediately after use remaining reagents should be returned to cold storage (2°C to 8°C). Expiry of the kit and reagents is stated on labels.

Expiry of the kit components can only be guaranteed if the components are stored properly, and if, in case of repeated use of one component, this reagent is not contaminated by the first handling.

Sample collection and storage instructions

Cell culture supernatant, serum, and plasma (EDTA, citrate) were tested with this assay. Other biological samples might be suitable for use in the assay. Remove serum or plasma from the clot or cells as soon as possible after clotting and separation. Samples containing a visible precipitate must be clarified prior to use in the assay. Do not use grossly hemolyzed or lipemic samples.

Samples should be aliquoted and must be stored frozen at -20°C to avoid loss of bioactive mouse IP-10. If samples are to be run within 24 hours, they may be stored at 2°C to 8°C (refer to "Sample stability" on page 6). Avoid repeated freeze-thaw cycles. Prior to

assay, the frozen sample should be brought to room temperature slowly and mixed gently.

Materials required but not provided

- 5 mL and 10 mL graduated pipettes
- 5 μ L to 1000 μ L adjustable single channel micropipettes with disposable tips
- 50 μ L to 300 μ L adjustable multichannel micropipette with disposable tips
- Multichannel micropipette reservoir
- Beakers, flasks, cylinders necessary for preparation of reagents
- Device for delivery of wash solution (multichannel wash bottle or automatic wash system)
- Microwell strip reader capable of reading at 450 nm (620 nm as optional reference wave length)
- Glass-distilled or deionized water
- Statistical calculator with program to perform regression analysis

Precautions for use

- All chemicals should be considered as potentially hazardous. We therefore recommend that this product is handled only by those persons who have been trained in laboratory techniques and that it is used in accordance with the principles of good laboratory practice. Wear suitable protective clothing such as laboratory overalls, safety glasses, and gloves. Care should be taken to avoid contact with skin or eyes. In the case of contact with skin or eyes wash immediately with water. See material safety data sheet(s) and/or safety statement(s) for specific advice.
- Reagents are intended for research use only and are not for use in diagnostic or therapeutic procedures.
- Do not mix or substitute reagents with those from other lots or other sources.
- Do not use kit reagents beyond expiration date on label.
- Do not expose kit reagents to strong light during storage or incubation.
- Do not pipet by mouth.
- Do not eat or smoke in areas where kit reagents or samples are handled.
- Avoid contact of skin or mucous membranes with kit reagents or samples.
- Rubber or disposable latex gloves should be worn while handling kit reagents or samples.
- Avoid contact of substrate solution with oxidizing agents and metal.
- Avoid splashing or generation of aerosols.
- To avoid microbial contamination or cross-contamination of reagents or samples that may invalidate the test, use disposable pipette tips and/or pipettes.
- Use clean, dedicated reagent trays for dispensing the conjugate and substrate reagent.
- Exposure to acid inactivates the conjugate.
- Glass-distilled water or deionized water must be used for reagent preparation.
- Substrate solution must be at room temperature prior to use.
- Decontaminate and dispose samples and all potentially contaminated materials as if they could contain infectious agents. The preferred method of decontamination is autoclaving for a minimum of 1 hour at 121.5°C.
- Liquid wastes not containing acid and neutralized waste may be mixed with sodium hypochlorite in volumes such that the final mixture contains 1.0% sodium hypochlorite. Allow 30 minutes for effective decontamination. Liquid waste containing acid must be neutralized prior to the addition of sodium hypochlorite.

Preparation of reagents

1. Buffer Concentrates should be brought to room temperature and should be diluted before starting the test procedure.
2. If crystals have formed in the Buffer Concentrates, warm them gently until they have completely dissolved.

Wash buffer (1x)

1. Pour entire contents (50 mL) of the Wash Buffer Concentrate (20x) into a clean 1000 mL graduated cylinder. Bring to final volume of 1000 mL with glass-distilled or deionized water.
2. Mix gently to avoid foaming.
3. Transfer to a clean wash bottle and store at 2°C to 25°C. Please note that Wash Buffer (1x) is stable for 30 days.
4. Wash Buffer (1x) may also be prepared as needed according to the following table:

Number of Strips	Wash Buffer Concentrate (20x) (mL)	Distilled Water (mL)
1 - 6	25	475
1 - 12	50	950

Assay buffer (1x)

1. Pour the entire contents (5 mL) of the Assay Buffer Concentrate (20x) into a clean 100 mL graduated cylinder. Bring to final volume of 100 mL with distilled water. Mix gently to avoid foaming.
2. Store at 2°C to 8°C. Please note that the Assay Buffer (1x) is stable for 30 days.
3. Assay Buffer (1x) may also be prepared as needed according to the following table:

Number of Strips	Assay Buffer Concentrate (20x) (mL)	Distilled Water (mL)
1 - 6	2.5	47.5
1 - 12	5.0	95.0

Biotin-Conjugate

Note: The Biotin-Conjugate should be used within 30 minutes after dilution.

Make a 1:100 dilution of the concentrated Biotin-Conjugate solution with Assay Buffer (1x) in a clean plastic tube as needed according to the following table:

Number of Strips	Biotin-Conjugate (mL)	Assay Buffer (1x) (mL)
1 - 6	0.03	2.97
1 - 12	0.06	5.94

Streptavidin-HRP

Note: The Streptavidin-HRP should be used within 30 minutes after dilution.

Make a 1:100 dilution of the concentrated Streptavidin-HRP solution with Assay Buffer (1x) in a clean plastic tube as needed according to the following table:

Number of Strips	Streptavidin-HRP (mL)	Assay Buffer (1x) (mL)
1 - 6	0.06	5.94
1 - 12	0.12	11.88

Mouse IP-10 standard

1. Reconstitute mouse IP-10 standard by addition distilled water.
2. Reconstitution volume is stated on the label of the standard vial. Allow the reconstituted standard to sit for 10-30 minutes. Swirl or mix gently to insure complete and homogeneous solubilization (concentration of reconstituted standard = 1000.0 pg/mL).

The standard has to be used immediately after reconstitution and cannot be stored.

External standard dilution

1. Label 7 tubes, one for each standard point: S1, S2, S3, S4, S5, S6, S7.
2. Prepare 1:2 serial dilutions for the standard curve as follows: Pipette 225 µL of Sample Diluent into each tube.
3. Pipette 225 µL of reconstituted standard (concentration of standard = 1000.0 pg/mL) into the first tube, labeled S1, and mix (concentration of standard 1 = 500.0 pg/mL).
4. Pipette 225 µL of this dilution into the second tube, labeled S2, and mix thoroughly before the next transfer.
5. Repeat serial dilutions 5 more times thus creating the points of the standard curve (see Figure 6).

Sample Diluent serves as blank.

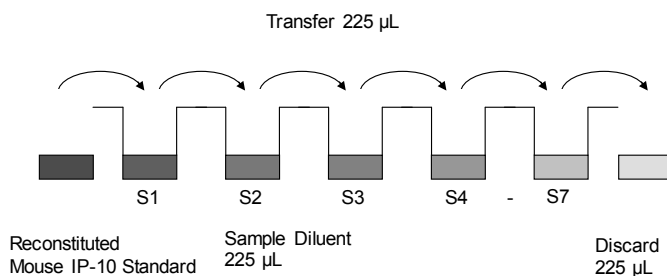


Fig. 6 Dilute standards - tubes

Test protocol

1. Determine the number of microwell strips required to test the desired number of samples plus appropriate number of wells needed for running blanks and standards. Each sample, standard, blank and optional control sample should be assayed in duplicate. Remove extra microwell strips from holder and store in foil bag with the desiccant provided at 2°C to 8°C sealed tightly.
2. Prepare Biotin-Conjugate (see "Biotin-Conjugate" on page 3).
3. Wash the microwell strips twice with approximately 400 µL Wash Buffer per well with thorough aspiration of microwell contents between washes. Allow the Wash Buffer to sit in the wells for about 10 – 15 seconds before aspiration. Take care not to scratch the surface of the microwells.
4. Standard dilution on the microwell plate (Alternatively the standard dilution can be prepared in tubes - see "External standard dilution" on page 3.):

Add 100 µL of Sample Diluent in duplicate to all standard wells. Pipette 100 µL of prepared standard (see "Mouse IP-10 standard" on page 3, concentration = 1000.0 pg/mL) in duplicate into well A1 and A2 (see Table 1). Mix the contents of wells A1 and A2 by repeated aspiration and ejection (concentration of standard 1, S1 = 500.0 pg/mL), and transfer 100 µL to wells B1 and B2, respectively (see Figure 7). Take care not to scratch the inner surface of the microwells. Continue this procedure 5 times, creating two rows of mouse IP-10 standard dilutions ranging from 500.0 to 7.8 pg/mL. Discard 100 µL of the contents from the last microwells (G1, G2) used.

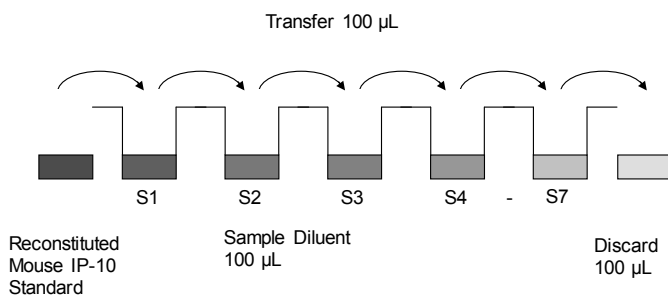


Fig. 7 Dilute standards - microwell plate

Table 1 Example of the arrangement of blanks, standards and samples in the microwell strips.

	1	2	3	4
A	Standard 1 500.0 pg/mL	Standard 1 500.0 pg/mL	Sample 1	Sample 1
B	Standard 2 250.0 pg/mL	Standard 2 250.0 pg/mL	Sample 2	Sample 2
C	Standard 3 125.0 pg/mL	Standard 3 125.0 pg/mL	Sample 3	Sample 3
D	Standard 4 62.5 pg/mL	Standard 4 62.5 pg/mL	Sample 4	Sample 4
E	Standard 5 31.3 pg/mL	Standard 5 31.3 pg/mL	Sample 5	Sample 5
F	Standard 6 15.6 pg/mL	Standard 6 15.6 pg/mL	Sample 6	Sample 6
G	Standard 7 7.8 pg/mL	Standard 7 7.8 pg/mL	Sample 7	Sample 7
H	Blank	Blank	Sample 8	Sample 8

In case of an external standard dilution (see “External standard dilution” on page 3), pipette 100 µL of these standard dilutions (S1 - S7) in the standard wells according to Table 1.

- Add 100 µL of Sample Diluent in duplicate to the blank wells.
- Add 50 µL of Sample Diluent to the sample wells.
- Add 50 µL of each sample in duplicate to the sample wells.
- Add 50 µL of Biotin-Conjugate to all wells.
- Cover with an adhesive film and incubate at room temperature (18°C to 25°C) for 2 hours on a microplate shaker.
- Prepare Streptavidin-HRP (refer to “Streptavidin-HRP” on page 3).
- Remove adhesive film and empty wells. Wash microwell strips 6 times according to point 3. of the test protocol. Proceed immediately to the next step.
- Add 100 µL of diluted Streptavidin-HRP to all wells, including the blank wells.
- Cover with an adhesive film and incubate at room temperature (18°C to 25°C) for 1 hour on a microplate shaker.
- Remove adhesive film and empty wells. Wash microwell strips 6 times according to point 3. of the test protocol. Proceed immediately to the next step.
- Pipette 100 µL of TMB Substrate Solution to all wells.
- Incubate the microwell strips at room temperature (18°C to 25°C) for about 10 minutes. Avoid direct exposure to intense light.

The color development on the plate should be monitored and the substrate reaction stopped (see next point of this protocol) before positive wells are no longer properly recordable. Determination of the ideal time period for color development has to be done individually for each assay.

It is recommended to add the stop solution when the highest standard has developed a dark blue color. Alternatively the color development can be monitored by the ELISA reader at 620 nm. The substrate reaction should be stopped as soon as Standard 1 has reached an OD of 0.9 – 0.95.

- Stop the enzyme reaction by quickly pipetting 100 µL of Stop Solution into each well. It is important that the Stop Solution is spread quickly and uniformly throughout the microwells to completely inactivate the enzyme. Results must be read immediately after the Stop Solution is added or within one hour if the microwell strips are stored at 2°C to 8°C in the dark.
- Read absorbance of each microwell on a spectro-photometer using 450 nm as the primary wave length (optionally 620 nm as the reference wave length; 610 nm to 650 nm is acceptable). Blank the plate reader according to the manufacturer's instructions by using the blank wells. Determine the absorbance of both the samples and the standards.

Note: In case of incubation without shaking the obtained O.D. values may be lower than indicated below. Nevertheless the results are still valid.

Calculation of results

- Calculate the average absorbance values for each set of duplicate standards and samples. Duplicates should be within 20% of the mean value.
- Create a standard curve by plotting the mean absorbance for each standard concentration on the ordinate against the mouse IP-10 concentration on the abscissa. Draw a best fit curve through the points of the graph (a 5-parameter curve fit is recommended).
- To determine the concentration of circulating mouse IP-10 for each sample, first find the mean absorbance value on the ordinate and extend a horizontal line to the standard curve. At the point of intersection, extend a vertical line to the abscissa and read the corresponding mouse IP-10 concentration.
- If instructions in this protocol have been followed, samples have been diluted 1:2 (50 µL sample + 50 µL Sample Diluent) and the concentration read from the standard curve must be multiplied by the dilution factor (x 2).
- Calculation of samples with a concentration exceeding standard 1 may result in incorrect, low mouse IP-10 levels. Such samples require further external predilution according to expected mouse IP-10 values with Sample Diluent in order to precisely quantitate the actual mouse IP-10 level.
- It is suggested that each testing facility establishes a control sample of known mouse IP-10 concentration and runs this additional control with each assay. If the values obtained are not within the expected range of the control, the assay results may be invalid.

- A representative standard curve is shown in Figure 8. This curve cannot be used to derive test results. Each laboratory must prepare a standard curve for each group of microwell strips assayed.

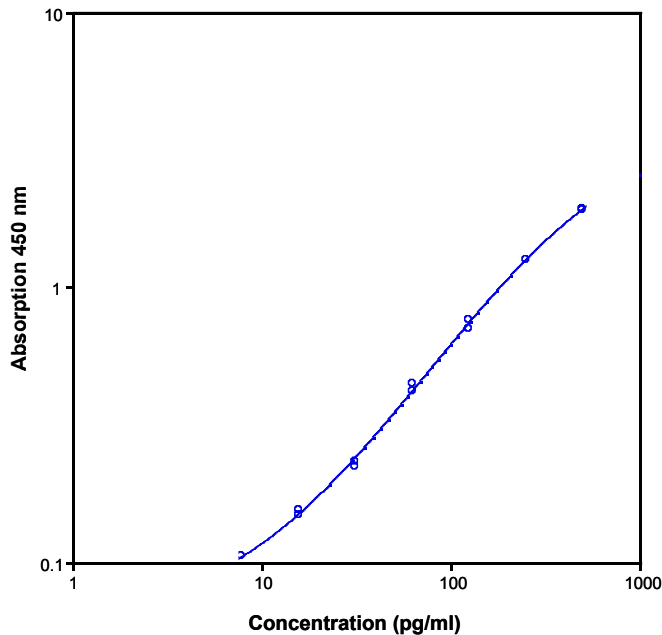


Fig. 8 Representative standard curve for mouse IP-10 ELISA. Mouse IP-10 was diluted in serial 2-fold steps in Sample Diluent. Do not use this standard curve to derive test results. A standard curve must be run for each group of microwell strips assayed.

Table 2 Typical data using the mouse IP-10 ELISA

Measuring wavelength: 450 nm

Reference wavelength: 620 nm

Standard	Mouse IP-10 Concentration (pg/mL)	O.D. at 450 nm	Mean O.D. at 450 nm	C.V. (%)
1	500.0	1.910 1.930	1.920	0.7
2	250.0	1.257 1.263	1.260	0.3
3	125.0	0.708 0.759	0.733	4.9
4	62.5	0.420 0.448	0.434	4.6
5	31.3	0.223 0.233	0.228	3.0
6	15.6	0.155 0.148	0.152	3.4
7	7.8	0.105 0.106	0.105	1.0
Blank	0.0	0.075 0.080	0.077	4.8

The OD values of the standard curve may vary according to the conditions of assay performance (e.g. operator, pipetting technique, washing technique or temperature effects). Furthermore shelf life of the kit may affect enzymatic activity and thus color intensity. Values measured are still valid.

Limitations

- Since exact conditions may vary from assay to assay, a standard curve must be established for every run.
- Bacterial or fungal contamination of either screen samples or reagents or cross-contamination between reagents may cause erroneous results.

- Disposable pipette tips, flasks or glassware are preferred, reusable glassware must be washed and thoroughly rinsed of all detergents before use.
- Improper or insufficient washing at any stage of the procedure will result in either false positive or false negative results. Empty wells completely before dispensing fresh wash solution, fill with Wash Buffer as indicated for each wash cycle and do not allow wells to sit uncovered or dry for extended periods.

Performance characteristics

Sensitivity

The limit of detection of mouse IP-10 defined as the analyte concentration resulting in an absorbance significantly higher than that of the dilution medium (mean plus 2 standard deviations) was determined to be 6.5 pg/mL (mean of 6 independent assays).

Reproducibility

Intra-assay

Reproducibility within the assay was evaluated in 3 independent experiments. Each assay was carried out with 6 replicates of 7 serum or plasma samples (spiked or unspiked) containing different concentrations of mouse IP-10. Two standard curves were run on each plate. Data below show the mean mouse IP-10 concentration and the coefficient of variation for each sample (see Table 3). The calculated overall intra-assay coefficient of variation was 8.4%.

Table 3 The mean mouse IP-10 concentration and the coefficient of variation for each sample

Sample	Experiment	Mean Mouse IP-10 Concentration (pg/mL)	Coefficient of Variation (%)
1	1	308.5	5.2
	2	266.2	5.6
	3	253.1	8.8
2	1	118.5	4.5
	2	108.9	9.5
	3	93.8	10.3
3	1	336.7	4.9
	2	310.9	6.2
	3	329.7	8.0
4	1	515.7	8.6
	2	444.1	5.3
	3	528.0	10.4
5	1	204.6	8.8
	2	191.8	10.3
	3	211.6	9.2
6	1	41.4	7.3
	2	39.1	7.7
	3	37.3	9.5
7	1	28.4	8.4
	2	26.0	11.8
	3	27.6	16.2

Inter-assay

Assay to assay reproducibility within one laboratory was evaluated in 3 independent experiments. Each assay was carried out with 6 replicates of 7 serum or plasma samples (spiked or unspiked) containing different concentrations of mouse IP-10. Two standard curves were run on each plate. Data below show the mean mouse IP-10 concentration and the coefficient of variation calculated on

18 determinations of each sample (see Table 4). The calculated overall inter-assay coefficient of variation was 7.2%.

Table 4 The mean mouse IP-10 concentration and the coefficient of variation of each sample

Sample	Mean Mouse IP-10 Concentration (pg/mL)	Coefficient of Variation (%)
1	275.9	10.5
2	107.1	11.7
3	325.8	4.1
4	495.9	9.1
5	202.7	5.0
6	39.3	5.3
7	27.4	4.5

Spike recovery

The spike recovery was evaluated by spiking 3 levels of mouse IP-10 into cell culture supernatant. Recoveries were determined in 3 independent experiments with 6 replicates each.

The unspiked cell culture supernatant was used as blank in these experiments.

The recovery ranged from 55% to 118% with an overall mean recovery of 90%.

Dilution parallelism

Cell culture supernatant samples with different levels of mouse IP-10 were analyzed at serial 2-fold dilutions with 4 replicates each.

The recovery ranged from 80.3% to 99.2% with an overall recovery of 90.9%.

Sample	Dilution	Expected Mouse IP-10 Concentration (pg/mL)	Observed Mouse IP-10 Concentration (pg/mL)	Recovery of Expected Mouse IP-10 Concentration (%)
1	1	-	200.4	-
	2	100.2	80.5	80.3
	4	40.2	35.3	87.8
	8	17.7	15.7	89.2
2	1	-	513.2	-
	2	256.6	233.2	90.9
	4	116.6	114.4	98.1
	8	57.2	56.7	99.2

Sample stability

Freeze-Thaw stability

Aliquots of cell culture supernatant samples were stored at -20°C and thawed 5 times, and the mouse IP-10 levels determined. There was no significant loss of mouse IP-10 immunoreactivity detected by freezing and thawing.

Storage stability

Aliquots of cell culture supernatant samples were stored at -20°C, 2°C to 8°C, and room temperature, and the mouse IP-10 level determined after 24 hours. There was no significant loss of mouse IP-10 immunoreactivity detected during storage under above conditions.

Specificity

The assay detects both natural and recombinant mouse IP-10. The interference of circulating factors of the immune system was evaluated by spiking these proteins at physiologically relevant concentrations. There was no crossreactivity detected.

Expected values

A panel of sera and plasma samples from randomly selected mice was tested for mouse IP-10. The detected mouse IP-10 levels ranged between 0 and 39 pg/mL with a mean level of 16.4 pg/mL for sera samples. Mean levels of plasma samples were of 16.0 pg/mL (EDTA) and 14.0 pg/mL (citrate).

Reagent preparation summary

Wash buffer (1x)

Add Wash Buffer Concentrate 20x (50 mL) to 950 mL distilled water.

Number of Strips	Wash Buffer Concentrate (mL)	Distilled Water (mL)
1 - 6	25	475
1 - 12	50	950

Assay buffer (1x)

Add Assay Buffer Concentrate 20x (5 mL) to 95 mL distilled water.

Number of Strips	Assay Buffer Concentrate (mL)	Distilled Water (mL)
1 - 6	2.5	47.5
1 - 12	5.0	95.0

Biotin-Conjugate

Make a 1:100 dilution of Biotin-Conjugate in Assay Buffer (1x):

Number of Strips	Biotin-Conjugate (mL)	Assay Buffer (1x) (mL)
1 - 6	0.03	2.97
1 - 12	0.06	5.94

Streptavidin-HRP

Make a 1:100 dilution of Streptavidin-HRP in Assay Buffer (1x):

Number of Strips	Streptavidin-HRP (mL)	Assay Buffer (1x) (mL)
1 - 6	0.06	5.94
1 - 12	0.12	11.88

Mouse IP-10 standard

Reconstitute lyophilized mouse IP-10 standard with distilled water. (Reconstitution volume is stated on the label of the standard vial.)

Test protocol summary

- Determine the number of microwell strips required.
- Prepare Biotin-Conjugate.
- Wash microwell strips twice with Wash Buffer.
- Standard dilution on the microwell plate: Add 100 µL Sample Diluent, in duplicate, to all standard wells. Pipette 100 µL prepared standard into the first wells and create standard dilutions by transferring 100 µL from well to well. Discard 100 µL from the last wells.
Alternatively external standard dilution in tubes (see "External standard dilution" on page 3): Pipette 100 µL of these standard dilutions in the microwell strips.
- Add 100 µL Sample Diluent in duplicate, to the blank wells.
- Add 50 µL Sample Diluent to sample wells.
- Add 50 µL sample in duplicate, to designated sample wells.
- Add 50 µL Biotin-Conjugate to all wells.
- Cover microwell strips and incubate 2 hours at room temperature (18°C to 25°C).
- Prepare Streptavidin-HRP.
- Empty and wash microwell strips 6 times with Wash Buffer.
- Add 100 µL diluted Streptavidin-HRP to all wells.
- Cover microwell strips and incubate 1 hour at room temperature (18°C to 25°C).
- Empty and wash microwell strips 6 times with Wash Buffer.
- Add 100 µL of TMB Substrate Solution to all wells.
- Incubate the microwell strips for about 10 minutes at room temperature (18°C to 25°C).
- Add 100 µL Stop Solution to all wells.
- Blank microwell reader and measure color intensity at 450 nm.

Note: If instructions in this protocol have been followed, samples have been diluted 1:2 (50 µL sample + 50 µL Sample Diluent) and the

concentration read from the standard curve must be multiplied by the dilution factor (x 2).

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Note: For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

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