

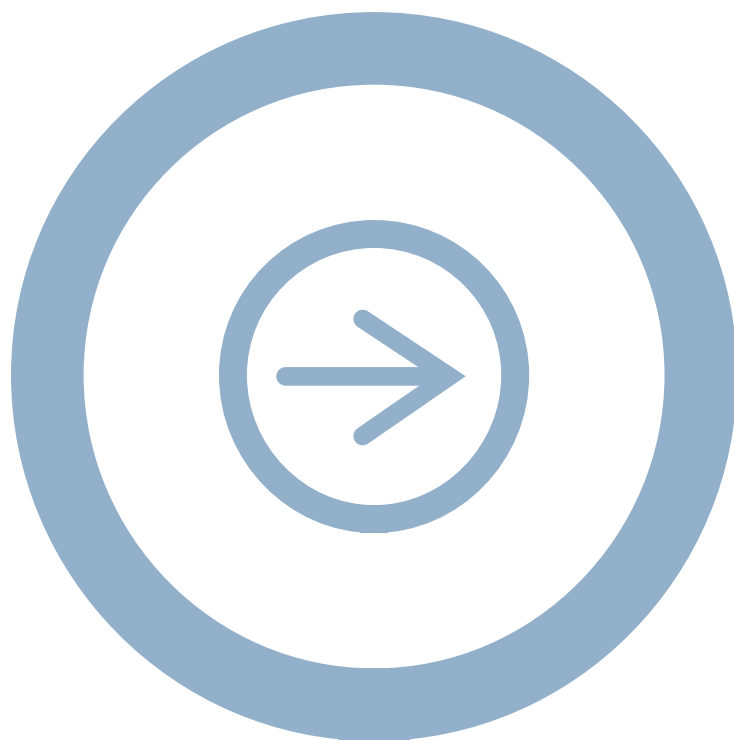
Technical Note

Using Chameleon™ Protein Ladders in Image Studio™ Software 4.0

Developed for:

Image Studio Software 4.0

Please refer to your manual to confirm that this protocol is appropriate for the applications compatible with your instrument model.



LI-COR®

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I. Introduction

This Technical Note explains how to use LI-COR® Chameleon Pre-Stained Protein Ladders in Image Studio Software 4.0. Procedures for the following are covered: adding protein markers to a **Work Area**, sizing bands using protein markers, and exporting data.

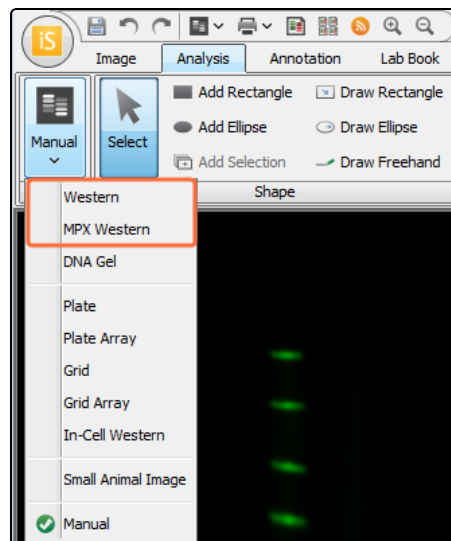
 [To see a demonstration of the topics covered here, watch this video.](#)

II. Start a Western or MPX™ Western Analysis


To add Chameleon Pre-Stained Protein Ladders to Image Studio Software or to use the markers in analysis, a **Western** or **MPX Western** application must be applied to an image.

To apply a **Western** or **MPX Western** application to an image:

1. Click the **Analysis** tab.
2. In the **Type** group, click **Western** or **MPX Western** in the **Analysis** type list.



The following resources explain how to use the **Western** application:

1. Click the blue question mark  in the upper right corner of the window to open the Image Studio Software Help.
2. In the **Contents** pane on the left side of the Software Help window, browse to Analysis Types > Western Analysis (or MPX Western Analysis).


(Alternatively, use the search box to search **Western** Analysis or **MPX Western** Analysis.)

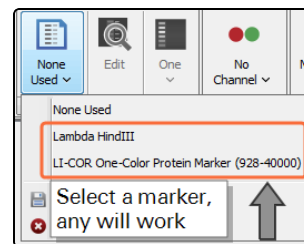
 [Watch this video tutorial for a Western Analysis demonstration.](#)

III. Add Chameleon Protein Ladders to Image Studio Software

Use the following procedure to enter molecular weight values for Chameleon Pre-Stained Protein Ladders and save the ladder to the current **Work Area**.


Add Molecular Weight Values

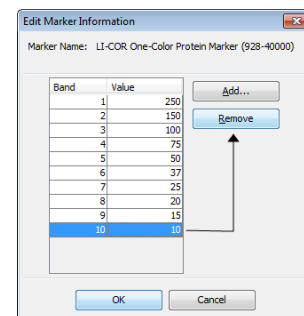
1. Ensure the **Western Analysis Application** tab or **MPX Western** tab is visible.
2. In the **Marker Lanes** group, select any Molecular Weight Marker from the **Select Marker Lanes Set** list .




3. Click **Edit** . The **Edit Marker Information** dialog will open.

NOTE: Changes made in this procedure will not overwrite the current marker, unless you save the changes with the current marker's name.

4. In the **Edit Marker Information** dialog, click to select a weight and click **Remove**. Repeat this step until all weights have been removed.
5. After all current weights have been removed, click **Add** to enter all the appropriate weight markers from Table 1 on the facing page.
6. After all appropriate weights have been added, click **OK**. The **Select Marker Lanes Set** list  will display **Custom**.



7. To save the newly added marker:
 - a. In the **Marker Lanes** group, click the **Select Marker Lanes Set** list .
 - b. Click **Save Current Marker Lane Set**.
The **Marker Set Name** dialog will open.
 - c. Enter the name of the marker and specify the channel (*e.g.* Chameleon Duo 700 or Chameleon Duo 800).

d. Click **OK**.

The new marker has been added to the **Work Area** and saved.

Repeat this process for each channel if the Chameleon Duo or Chameleon Kit is being used.

NOTE: The Chameleon Duo, Chameleon 700, Chameleon 800, and Chameleon Kit have a visible 260 kDa band. The band does not appear in the 700 nm channel for Chameleon 700, so **DO NOT** include this value when adding weights to the Chameleon 700 marker set.

NOTE: If you are using the Chameleon 700 only (not Chameleon 800), there will be no 125 kDa band.

Table of Chameleon Protein Ladder Sizes


Chameleon Duo (PN 928-6000)		Chameleon Kit (PN 928-90000)		Chameleon 700 (PN 928-70000)	Chameleon 800 (PN 928-80000)
700 Channel	800 Channel	700 Channel	800 Channel	700 channel	800 channel
160	260	160	260	160	260
125	125	125	125	90	125
90	70	90	70	50	70
50	38	50	38	30	38
30	25	30	25	15	25
15	8	15	8	8	8
8		8			

Table 1. Use these values when entering marker data into Image Studio Software.

IV. Size Bands Using Markers


Follow this procedure to estimate unknown band sizes based on protein markers.

1. Ensure that a **Western Analysis** or **MPX Western Analysis** has been applied to the image, and ensure all appropriate marker and sample protein bands have been found (enclosed by a rectangle).

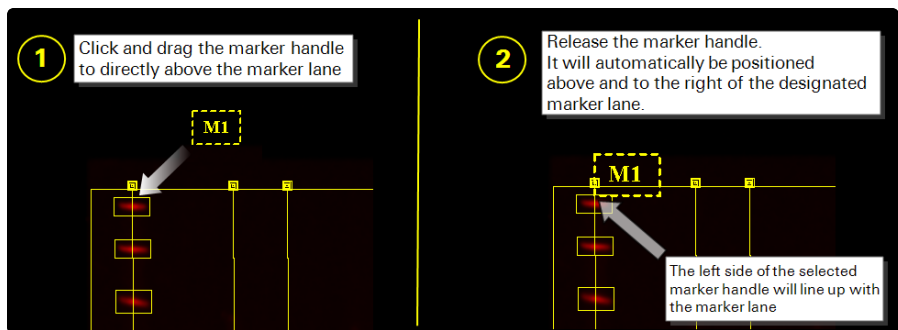
MORE INFO: For help using one of these applications, search the help system  for the "Western Analysis" or "MPX Western" topic.

2. Click the **Select Marker Lanes Set** list  on the far left of the **Marker Lanes** group and select the appropriate marker.

A marker handle will appear above the blot **M1**.

NOTE: To designate more than one marker lane, click the **Number of Marker Lanes** list  and select the number of marker lanes being used.

3. Click and drag the marker handle directly above the marker lane. After releasing the marker handle, it will automatically be positioned above and to the right of the designated marker lane.



4. The estimated band sizes will appear in the **Size** column in the **Western Bands Table**.

Image Name	Channel	Name	Size	Signal
The Size column. Columns can be moved and may not appear in this order.				
			160	6.56E-1
			90.0	1.69E0
			50.0	6.45E0
			30.0	7.66E0
Useful_Western	700	B05	15.0	2.15E0
Useful_Western	700	B06	8.00	5.61E0

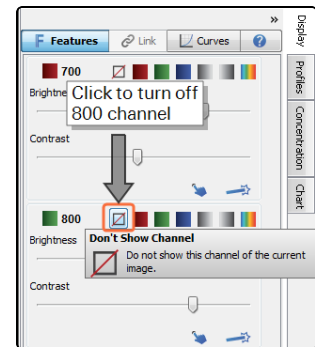
V. Export Size Data for Chameleon Duo or Chameleon Kit

Use this procedure to export data if Chameleon Duo or Chameleon Kit markers were used. Data will be exported to a .xls file or opened using a spreadsheet program.

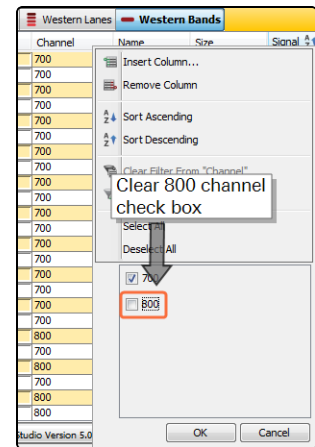
NOTE: Size data from the 700 and 800 channels must be exported separately.


Begin by filtering out 800 channel data and exporting 700 channel data.

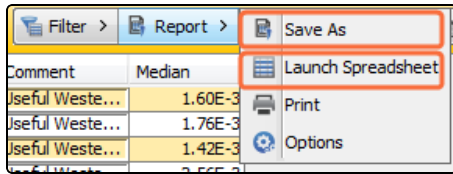
1. Turn off 800 channel visibility by clicking the **Don't Show Channel** button in the 800 channel section of the **Display** tab.



2. In the **Marker Lanes** group, check to ensure the correct 700 marker set is chosen.
3. In the **Western Bands Table**, right click the **Channel** column header, and click to disable the 800 channel check box.



4. Click **OK**.
5. Export the data to a spreadsheet by clicking **Report**  above and to the right of the table.




6. Click **Save As** to save the data to a .xls file or click **Launch Spreadsheet** to open the data in the default program for opening .xls files.

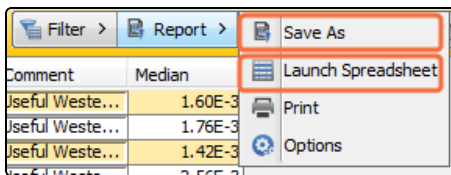
To export 800 channel data, repeat the above procedure but with 700 channel visibility turned off (using the **Don't Show Channel** button) and 700 channel data filtered out (right click the **Channel** column header and disable the 700 channel check box).

VI. Export Size Data for Chameleon 700 or 800

Use this procedure to export data if Chameleon 700 or Chameleon 800 markers were used. Data will be exported to a .xls file or opened using a spreadsheet program.

NOTE: If the Chameleon 700 ladder is being used, ensure no bands defined in the 800 channel are visible and *vice versa*.

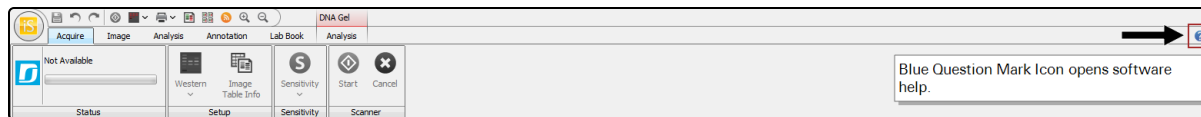
1. In the **Marker Lanes** group, check to ensure the correct 700 or 800 marker set is chosen.
2. Export the data to a spreadsheet by clicking **Report**  above and to the right of the table.



3. Click **Save As** to save the data to a .xls file or click **Launch Spreadsheet** to open the data in the default program for opening .xls files.

VII. Further Questions

1. See the software help. Click the blue question mark in the upper right corner of the window to open the help. The upper right corner of the software help has a search box for quickly finding answers.



2. Contact LI-COR Technical Support (details in the footer of this document).

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