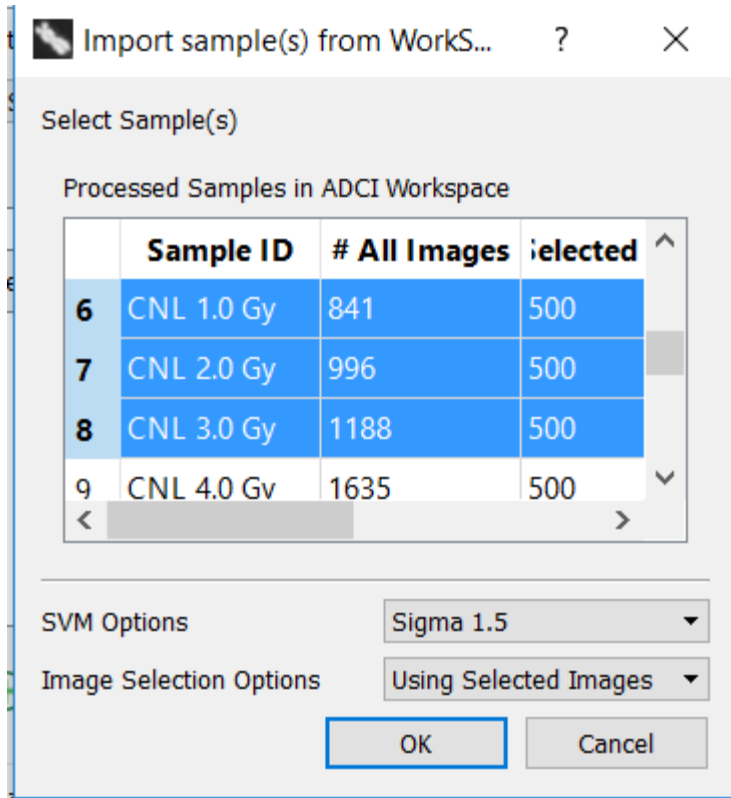


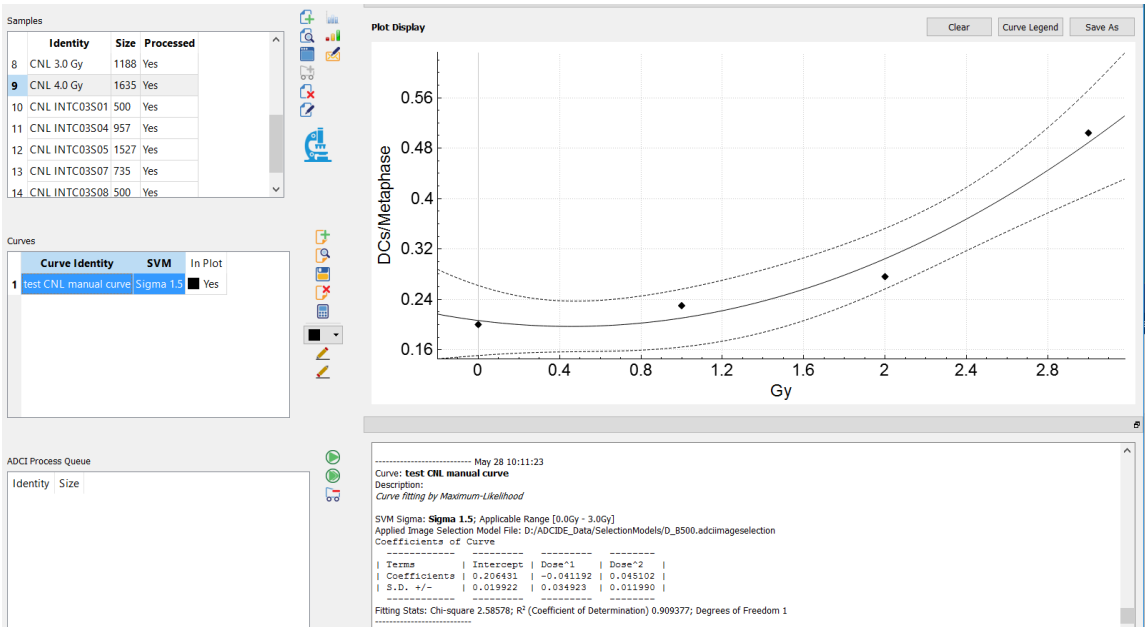
To create a calibration curve from manually selected images at different doses

- 1) Ensure the appropriate samples are present in the workspace
- 2) Highlight an appropriate sample and enter the metaphase image viewer
- 3) Click “Load Selection” and load the selection (within "manual selections" directory) corresponding to the current sample. The sample should now contain only images specified in the selection which was loaded.
- 4) Repeat steps 2-3 for all appropriate calibration samples
- 5) Click the “Create a curve” icon and select “Fitting curve to Dose-Response data” from the dropdown. This will open the “Create a curve” dialog.
- 6) Select an SVM sigma value from the dropdown and provide a unique ID for the curve.
- 7) With the “Create a Curve” dialog still open, highlight an appropriate calibration sample with manually selected images loaded in the main gui.
- 8) Click “Import” in the “Create a Curve” dialog. Hold ctrl key and select each of the samples in which manually selected images have been loaded.
9. Select the desired SVM value. . The sigma value corresponding to the chosen DC/Cell from the console should match the sigma value chosen in the “Create a Curve” dialog.

10. Image Select options: Using selected images



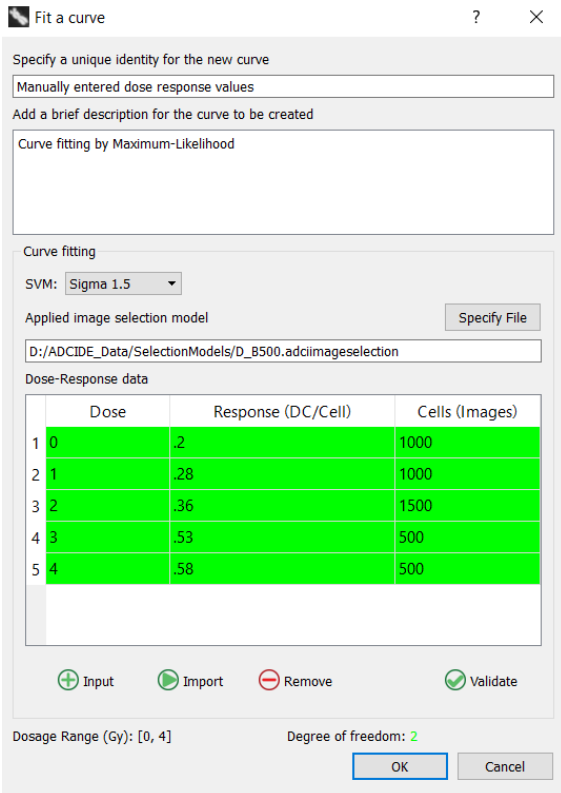
11. Click OK.
12. Apply image selection model if desired. Should use same image selection model for Test samples of unknow dose.
13. Double click, and Replace “Dose of *sample name*” with numeric calibrated dose. Do this for all manually selected calibration samples.
- 14) Repeat steps 7-11 for all appropriate calibration samples.
- 15) Click “Validate Data” and click “OK” to complete the process.
- 16) Save the curve to a file using a unique name that describes the manually selected sample, the Number of images selected for example.
17. Plot and view curve:



The following methods will produce calibration curves that may be quite different from those obtained by automated dicentric identification in ADCI because ADCI detects fewer dicentric chromosomes than an experienced biodosimetrist (since it has a lower dose response, but it is highly consistent between samples).

To create a curve from manually entered dose response values (minimum of 3 required):

1. Click the “Create a curve” icon and select “Fitting curve to Dose-Response data” from the dropdown. This will open the “Create a curve” dialog.



2. Specify identity of the curve
3. Optionally set SVM sigma value, and/ or apply existing image selection model. These values will only be used when estimating dose of a test sample of unknown dose. *Note: Manually specified dose-response values may not estimate doses consistent with those obtained by ADCI when creating a curve using processed samples of calibrated dose.*
4. Select and click Input in the Curve dialog screen. Double click: input dose here and enter a dose value in Gy. Double click: Input response here and enter dose response in dicentric chromosomes/cell (usually a fractional value). If maximum likelihood fit is requested, double click cell count and enter an integer value.
5. Repeat step 4 for all calibration doses.
6. Click Validate.
7. Click OK. Save the curve to a file. Specify a file name that describes the source of the data for making the curve (ie. Manually entered dose response values from...).
8. Plot curve

Samples

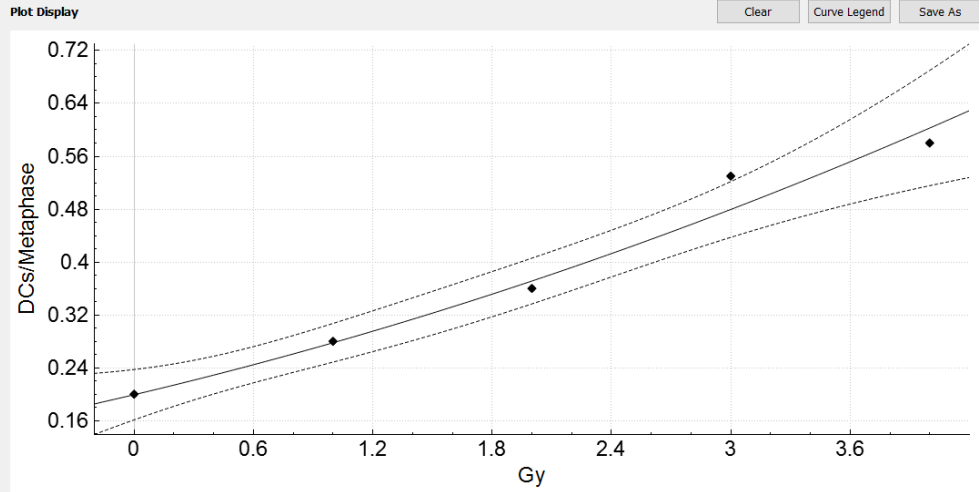
	Identity	Size	Processed
2	CNL 0.1Gy	1000	Yes
3	CNL 0.5 Gy	1532	Yes
4	CNL 0.25 Gy	1000	Yes
5	CNL 0.75 Gy	1000	Yes
6	CNL 1.0 Gy	841	Yes
7	CNL 2.0 Gy	996	Yes
8	CNL 3.0 Gy	1188	Yes

Curves

	Curve Identity	SVM	In P
1	Manually entered dose response values	Sigma 1.5	Yes

ADCI Process Queue

Identity	Size



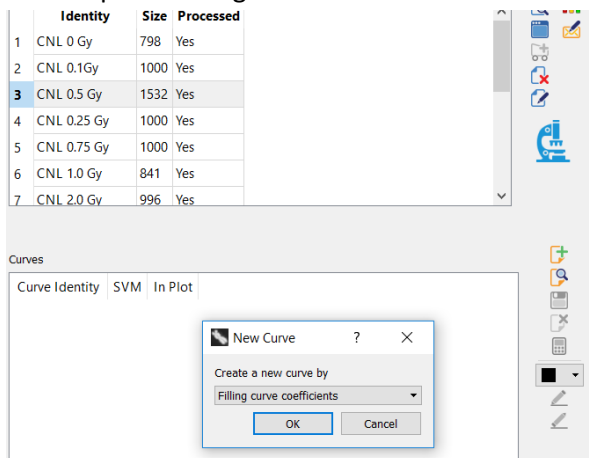
----- May 28 10:47:37
 Curve: **Manually entered dose response values**
 Description:
 Curve fitting by *Maximum-Likelihood*
 SVM Sigma: **Sigma 1.5**; Applicable Range [0.0Gy - 4.0Gy]
 Applied Image Selection Model File: D:/ADCIDE_Data/SelectionModels/D_B500.adcimageselection
 Coefficients of Curve

Terms	Intercept	Dose^1	Dose^2
Coefficients	0.199274	0.073119	0.007429
S.D. +/-	0.013644	0.019269	0.005521

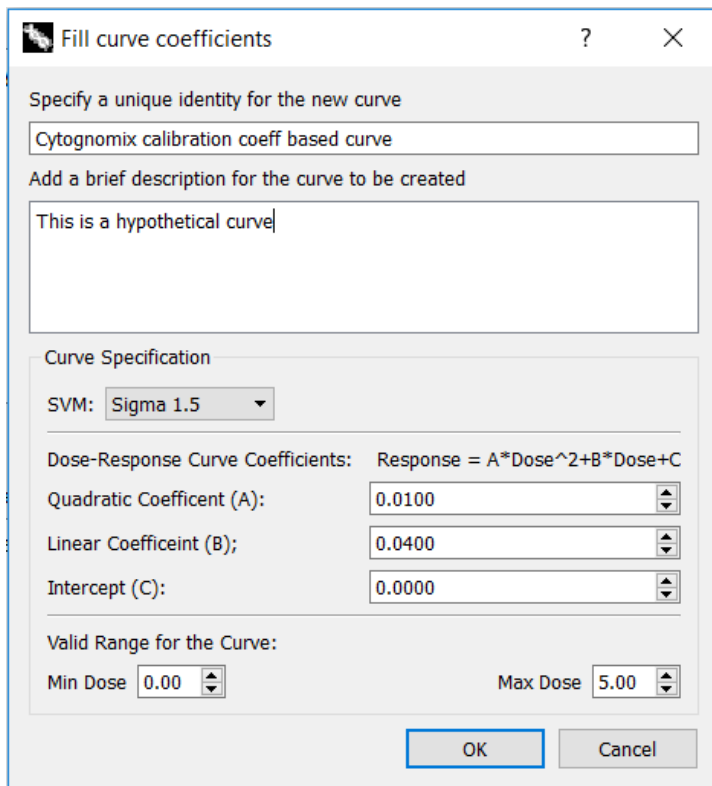
Fitting Stats: Chi-square 3.61356; R² (Coefficient of Determination) 0.948525; Degrees of Freedom 2

To create a manual curve from coefficients:

1. Select new curve.
2. Select option “filling curve coefficients”



3. Enter coefficients in dialog box. Other values are either default or optional and can be changed.



4. Click OK.
5. Save it to a file? Enter Yes. Provide a file name
6. Curve name will appear in the Curve window.
7. Select the curve with the mouse, and plot the curve. Result:

Samples

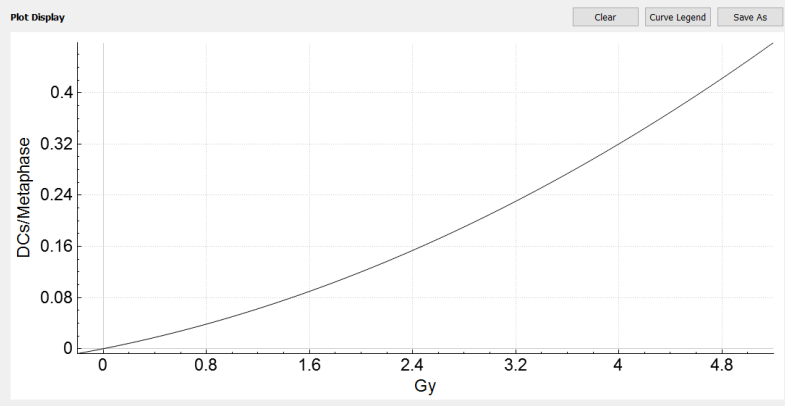
	Identity	Size	Processed
8	CNL 3.0 Gy	1188	Yes
9	CNL 4.0 Gy	1635	Yes
10	CNL INTC03S01	500	Yes
11	CNL INTC03S04	957	Yes
12	CNL INTC03S05	1527	Yes
13	CNL INTC03S07	735	Yes
14	CNL INTC03S08	500	Yes

Curves

	Curve Identity	SVM	In
1	test CNL manual curve	Sigma 1.5	N
2	Cytognomix calibration coeff based curve	Sigma 1.5	N

ADCI Process Queue

Identity	Size



----- May 28 10:23:18

Curve: **Cytognomix calibration coeff based curve**

Description:
This is a hypothetical curve
 SVM Sigma: **Sigma 1.5**, Applicable Range [0.0Gy - 5.0Gy]
 Applied Image Selection Model File: None

Coefficients of Curve

Terms	Intercept	Dose ⁻¹	Dose ⁻²
Coefficients	0.000000	0.040000	0.010000
S.D. +/-	0.000000	0.000000	0.000000

Fitting Stats: Not Applicable
