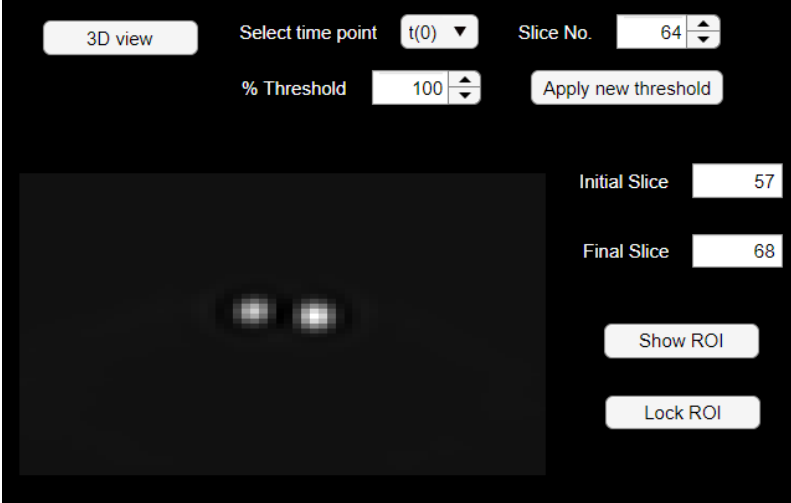
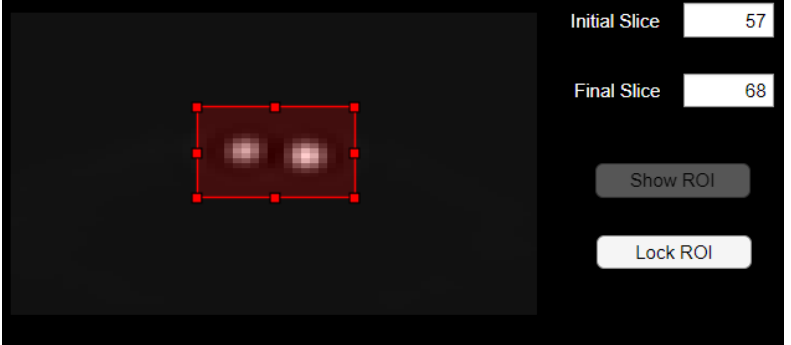
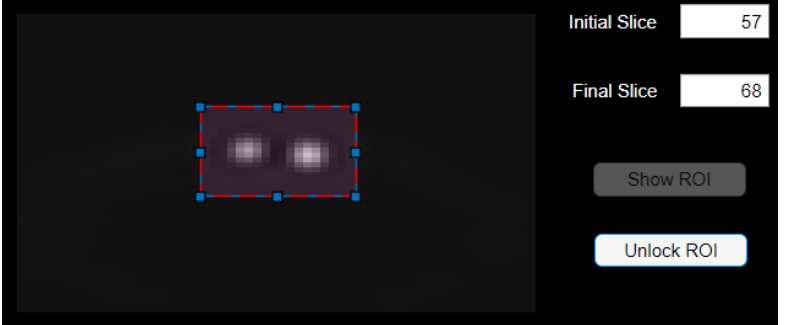
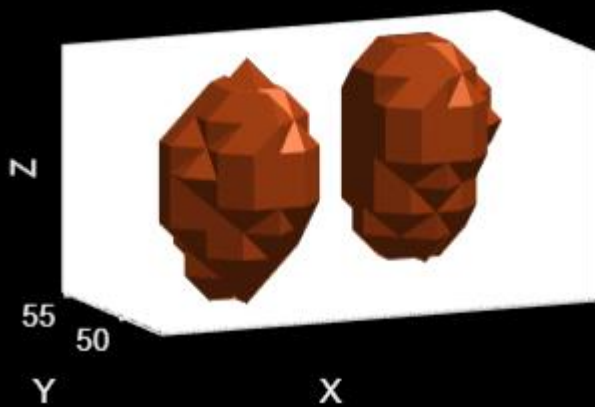


Dosimetry & Radiobiological Model							
	Inputs						
	<table border="1"> <tr> <td>Inputs</td> <td>Dosage</td> <td>Statistics</td> <td>View Remnant</td> <td>Exit Algorithm</td> <td></td> </tr> </table>	Inputs	Dosage	Statistics	View Remnant	Exit Algorithm	
Inputs	Dosage	Statistics	View Remnant	Exit Algorithm			
1							
	<table border="1"> <tr> <td>Inputs</td> <td>Dosage</td> <td>Statistics</td> <td>View Remnant</td> <td>Exit Algorithm</td> <td></td> </tr> </table> <p>1. Enter number of diagnostic acquisitions <input type="text" value="4"/></p> <p>(max 4: initial acquisition and at subsequent time-point)</p>	Inputs	Dosage	Statistics	View Remnant	Exit Algorithm	
Inputs	Dosage	Statistics	View Remnant	Exit Algorithm			
2							
	<p>2. Enter where applicable the subsequent time-points (hours) from initial acquisition t(0)</p> <p>t(0) <input type="text" value="0"/> t(1) <input type="text" value="2"/> t(2) <input type="text" value="19.4"/> t(3) <input type="text" value="35"/></p> <p>Note: It does not matter if there is time-interval between injection of radiopharmaceutical and initial acquisition</p>						
3							
	<p>3. Enter duration of acquisitions (sec) <input type="text" value="2100"/></p>						
4							
	<p>4. <input type="button" value="Import"/> SPECT images</p> <p>Note: all images to be PVE corrected or non-corrected</p>						
5	Options to insert Average Conversion Coefficient (Counts to Activity)						
	<p>5. Average Conversion Coefficient (Counts to Activity)</p> <p>a. from PVE algorithm <input type="button" value="Load File"/> <input checked="" type="checkbox"/></p> <p>b. if average conversion coefficient not loaded automatically, write it <input type="text" value="1.466e+05"/></p> <p>c. <input type="button" value="Calculate"/> Average Conversion Coefficient</p>						
6							

	<p>6. Enter Residence Time (sec) 3600</p> <p>when no acquisitions are entered in subsequent time-points</p>	
7	<p>View SPECT image for selected time-point</p> <p>Options: scroll to view remnants, save image, copy image, pan, zoom in, zoom out, restore view</p>	
		
	<p>“Show” ROI</p>	
		
	<p>“Lock ROI”</p>	
		
8	<p>3D view of remnants</p>	



9

7. Optional

Check to calculate doses using volume of remnants

a. enter number of remnants (max 4)

b. Enter volume (ml) for

Remnant 1 Remnant 2

Remnant 3 Remnant 4

Dosage

Inputs

Dosage

Statistics

View Remnant

Exit Algorithm

10

1a. Enter administered activities

Diagnostic activity

I-123 (MBq)

I-131 (MBq)

Therapeutic activity

I-131 (MBq)

Calculate Dose

automatic alignment

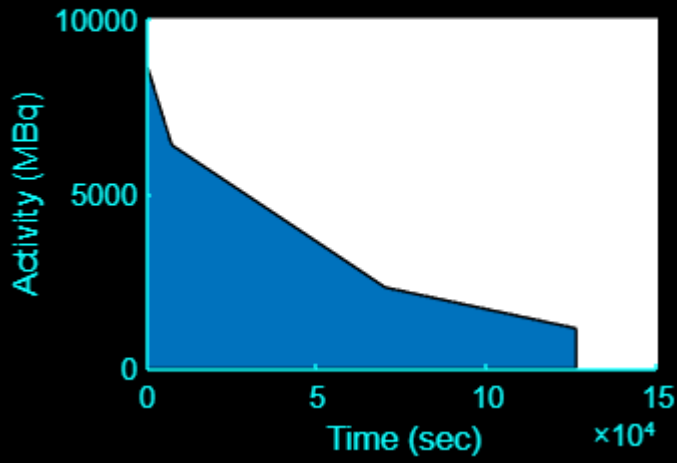
11

Calculate Dose

automatic alignment

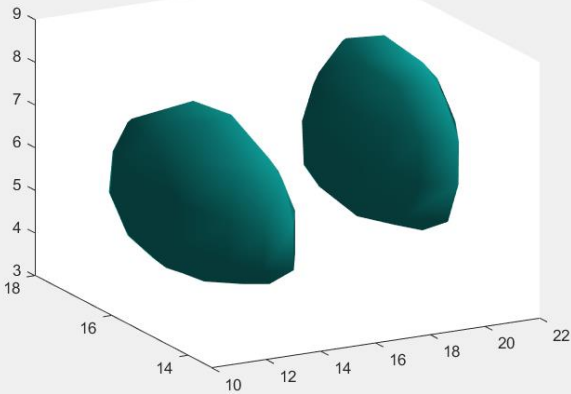
12 Plot of Activity vs Counts

1b. Average Cumulative Activity



13 3D View of remnants

3D view



14

1c. Remnants Data

Index	# Remn Vol	Dose using counts (Gy)	Dose using volume (Gy)
1	7.8418	6.4091	1.2259
2	8.0141	4.5741	1.7123

Export Remnants Data Table

15 Export

Export Remnants Data Table

16 Insert Tags for filling purposes

Enter ...

Enter Tag Numbers for filling purposes-Tag1 (compulsory):

Tag2 (Optional):

Tag3 (Optional):

Tag4 (Optional):

Tag5 (Optional):

Tag6 (Optional):

17

2. Radiobiological model

Choose Dose
 Choose thyroid uptake

2. Radiobiological model

Choose Dose

Choose thyroid uptake

Recommendations:

Dosage = 6.409 Gy

Bone marrow:

Bone marrow suppression is mostly transient and results in a decrease in white blood cell and platelet count for up to 6-10 weeks and occasionally results in increased susceptibility to infection or bleeding if the marrow dose exceeds about 2 Sv (2Gy).

Bone marrow suppression was also increased when the whole body retention at 48 h exceeded 120 mCi. (Ref. 1-3)

Oligospermia:

Threshold to avoid oligospermia in men

To reduce gonadal complications all necessary measures to reduce this radiation

Evaluate

Organ uptake for Activity equivalent to 3700.00 MBq

Adrenals	162.800 mGy
Bone surfaces	111.000 mGy
Brain	77.700 mGy
Breast	74.000 mGy
Gallbladder wall	136.900 mGy
Gastrointestinal tract	
Stomach wall	3219.000 mGy
Small intestine wall	129.500 mGy
Colon wall	518.000 mGy
(Upper large intestine wall)	444.000 mGy
(Lower large intestine wall)	629.000 mGy
Heart wall	229.400 mGy
Kidneys	999.000 mGy
Liver	185.000 mGy
Lungs	196.100 mGy
Muscles	96.200 mGy
Spleen	88.800 mGy

18

3. Optional

You can enter other therapeutic activity in 1a and calculate other doses

Statistics

Inputs

Dosage

Statistics

Exit Algorithm

19

Calculate

Remnant

1

20

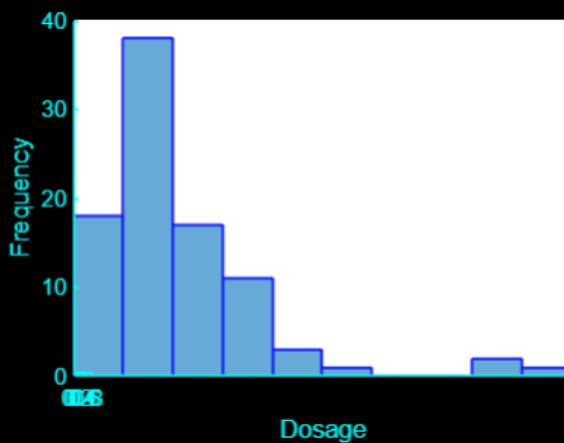
Remnant

1

Dosage Histogram

100

% volume



21

Output Filename

Export histogram to file



22

Click to calculate doses (Gy) of following volumes

80 % volume 100 % volume 120 % volume

% Volume	Mean	Std	Min	Max
80	5.1464	3.1374	1.0922	19.9505
100	6.4091	4.9401	1.0922	28.7475
120	7.0516	6.5041	1.0553	44.7491

23

Export

Export doses table to file

24 Insert Tags for filling purposes

66

Enter Tag Numbers for filling purposes-Tag1 (compulsory):
1

Tag2 (Optional):
BOCOC

Tag3 (Optional):
Custom-made phantom

Tag4 (Optional):
Standard 1

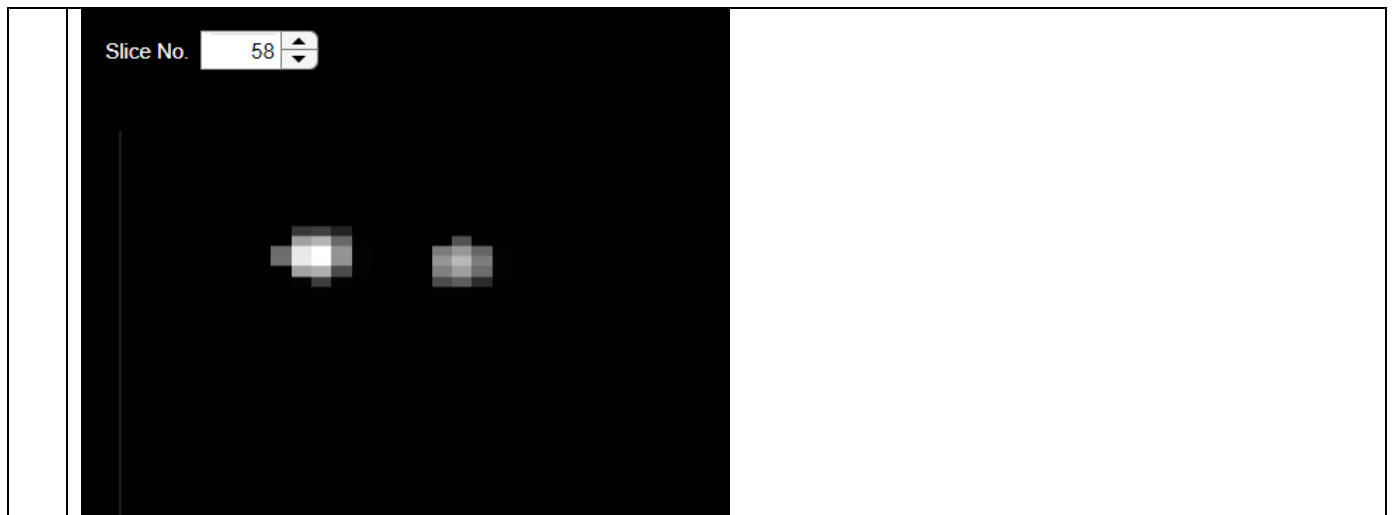
Tag5 (Optional):
I-123

Tag6 (Optional):

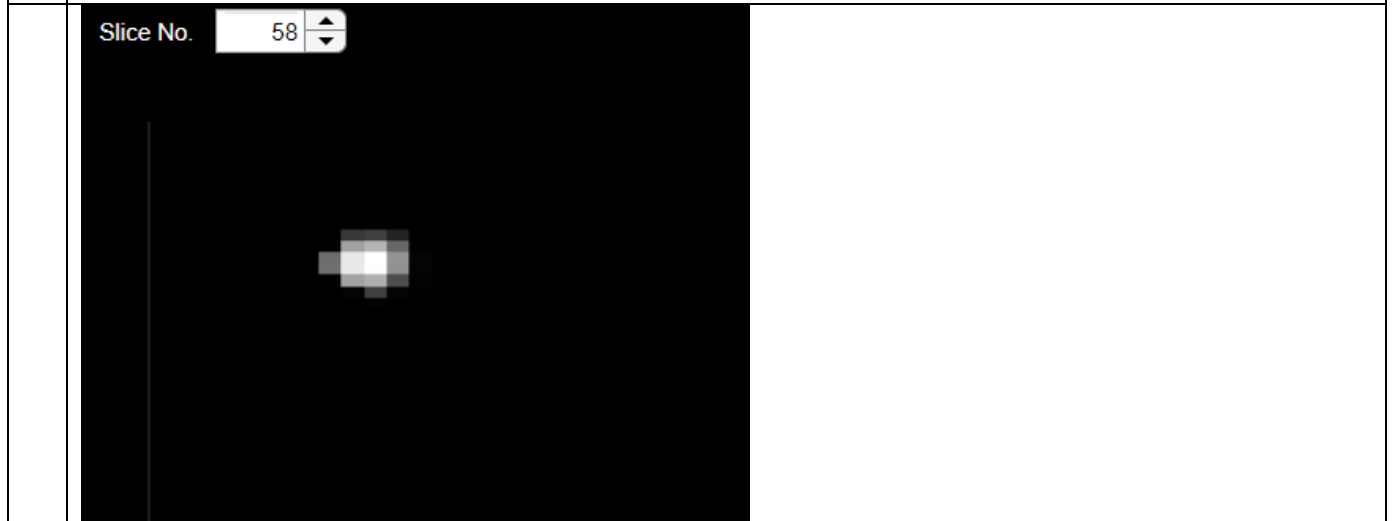
OK Cancel

25

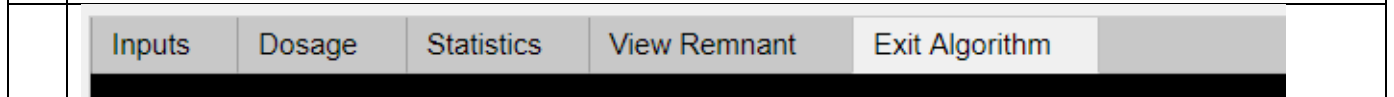
SPECT Image with remnants
Options: scroll to view remnants, save image, copy image, pan, zoom in, zoom out, restore view



26 SPECT Image showing the selected remnant



Exit algorithm



27

