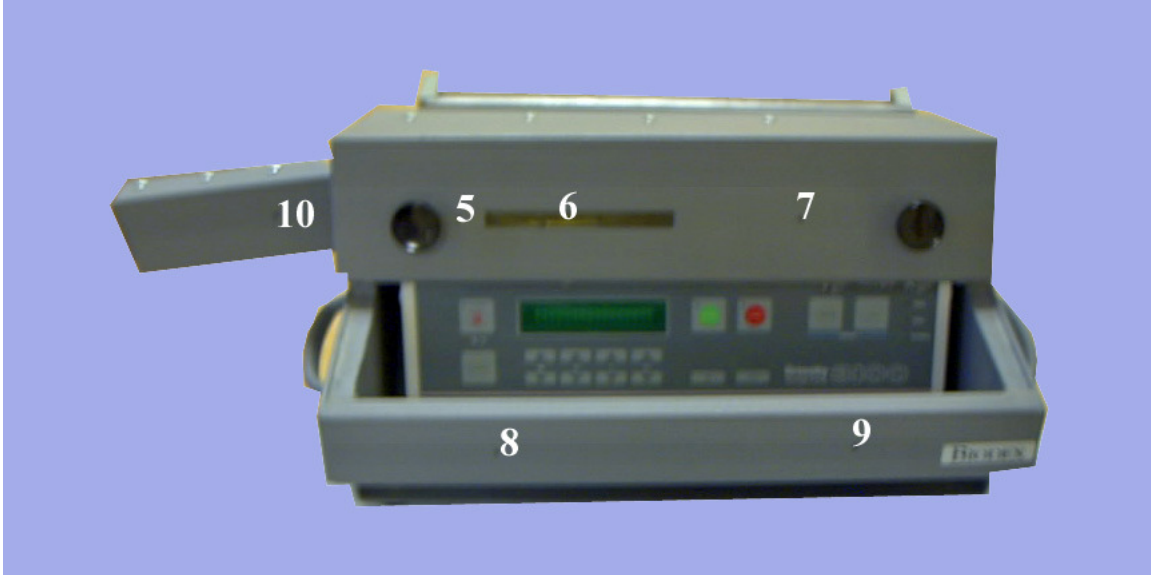


**RADIATION LEVELS FROM A BEXXAR
SHIELD USING SPECIFIC RADIONUCLIDES
INCLUDING Y-90, I-131 AND F-18**

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BEXXAR SHIELD TLD LOCATION

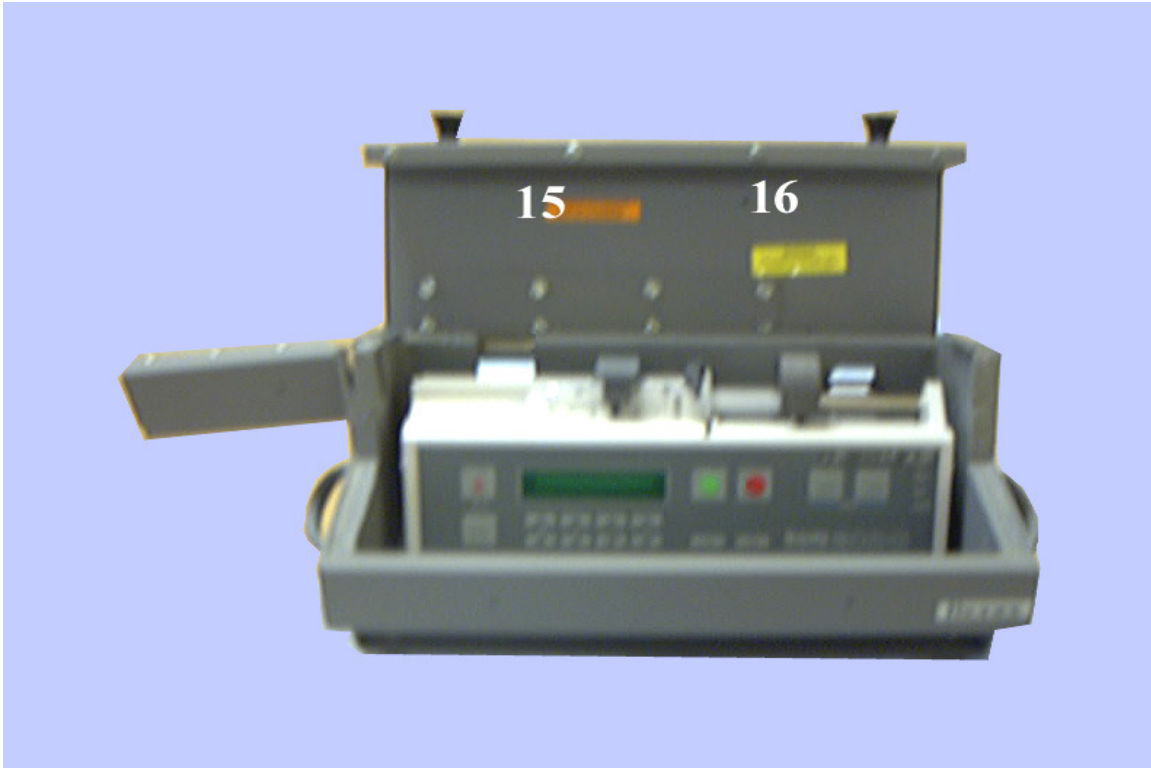
FRONT VIEW



TOP/BACK VIEW



FRONT VIEW- OPEN SHIELD



LEFT SIDE VIEW

RIGHT SIDE VIEW



TLD LOCATION ON BEXXAR SHIELD

LOCATION	DESCRIPTION
1	Top left back of shield
2	Top left front of shield
3	Top right back of shield
4	Top right front of shield
5	Front left of shield over lead section
6	Front center of shield over lead glass section
7	Front right of shield over lead section
8	Bottom left front of shield
9	Bottom right front of shield
10	Left front extension of shield
11	Right side of shield
12	Left side of shield
13	Left back of shield
14	Right back of shield
15	Inside left top of shield
16	Inside right top of shield
17	On syringe

Y-90 RADIOPHARMACEUTICAL

Y-90, 39.3 mCi (10 ml volume) in a 10-ml Syringe, was placed on the infusion pump in a Bexxar Shield and TLD chips were placed at specified locations. In addition, one TLD was placed on the surface of the syringe. The TLD chips were exposed for one hour, removed and sent to Laundaur Inc for radiation readouts along with a control. The radiation levels at the specified locations were as follows:

Location		Radiation level (mrem/hr)
1		1
2		3
3		0
4		0
5		3
6		21
7		1
8		1
9		0
10		4
11		2
12		4
13		0
14		3
15		36991
16		511
17		850432

I-131 SODIUM IODIDE

I-131, 154.1 mCi (3 ml volume in glass vial), was placed on the infusion pump in a Bexxar Shield and TLD chips were placed at specified locations. In addition, one TLD was placed on the surface of the vial. The TLD chips were exposed for one hour, removed and sent to Laundaur Inc for radiation readouts along with a control. The radiation levels at the specified locations were as follows:

Location		Radiation level (mrem/hr)
1		10
2		67
3		9
4		38
5		34
6		1639
7		26
8		32
9		15
10		12
11		17
12		24
13		19
14		83
15		3426
16		3005
17		218548

F-18 Fluorodeoxyglucose

F-18, 116.6 mCi (2.0 ml) in a 3-ml syringe, was placed on the infusion pump in a Bexxar Shield and TLD chips were placed at specified locations. In addition, one TLD was placed on the surface of the syringe. The TLD chips were exposed for one hour, removed and sent to Laundaur Inc for radiation readouts along with a control. The radiation levels at the specified locations were as follows:

Location		Radiation level (mrem/hr)
1		153
2		1209
3		16
4		53
5		402
6		14531
7		42
8		275
9		84
10		78
11		78
12		272
13		43
14		752
15		19468
16		5090
17		1488257

RESULTS

Y-90

For Y-90, the Bexxar shield was effective in reducing radiation on the outside of the shield. The highest radiation level on the outside of the shield was on the leaded glass with a reading of 21 mrem/hr. All other areas on the outside of the shield were at or below 4 mrem/hr demonstrating a significant reduction in radiation levels.

I-131

The Bexxar shield was effective in reducing radiation levels from I-131. The highest external radiation level was observed on the leaded glass section with a radiation reading of 1639 mrem/hr. All other external radiation readings were 83 mrem/hr or below. Radiation levels inside the shield were 3426 mrem/hr and 3005 mrem/hr.

F-18

The external radiation levels on the Bexxar shield for F-18 were 5 to 10 times higher than for I-131. This is expected since the radiation level on the outside of the syringe is also about 5 times higher for F-18 than for I-131. Again, the highest radiation level was observed on the leaded glass section with a radiation reading of 14531 mrem/hr. Also areas surrounding the syringe (Number 2, 5, 8, 12 and 14) were higher than other external areas.