REPOSITORY DOE-FORRESTAL

COLLECTION MARKEY FILES

BOX No. 4 OF 6

FOLDER 2. 4 LEVINE & SON DTPA TREATMENT MAY 7, '71 –

705549

MEMO ROUTE SLIP
-93 (Rev. May 14, 1947) AECM 0240

☐ See me about this. ☐ Note and return. ☐ For concurr ☐ For signature. ☐ For action. ☐ For information.

...me and unit)	INITIALS / DATE	REMARKS
Dr. W.W.H. Weyzen DBER, HQ		
TO (Name and unit)	INITIALS / DATE	REMARKS
TO (Name and unit)	INITIALS / DATE	REMARKS
FROM (Name and unit) J. Harley, HASL T		REMARKS This is a summary of the thorotrast excretion data.
PHONE NO.	DATE 10/2 75	

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USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO : 1971 O - 445-469

THORIUM EXCRETION FROM A THOROTRAST PATIENT

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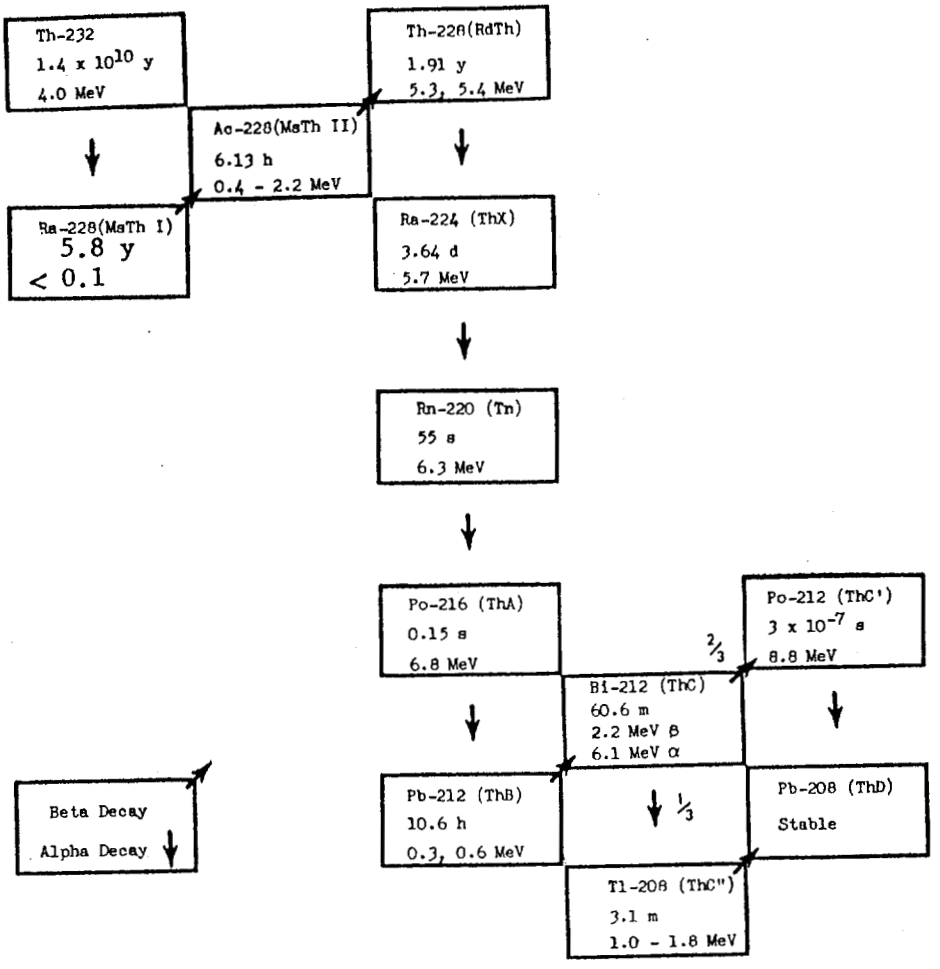
Figure 1



Principal Decay Scheme
of the Thorium Series

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Figure 2

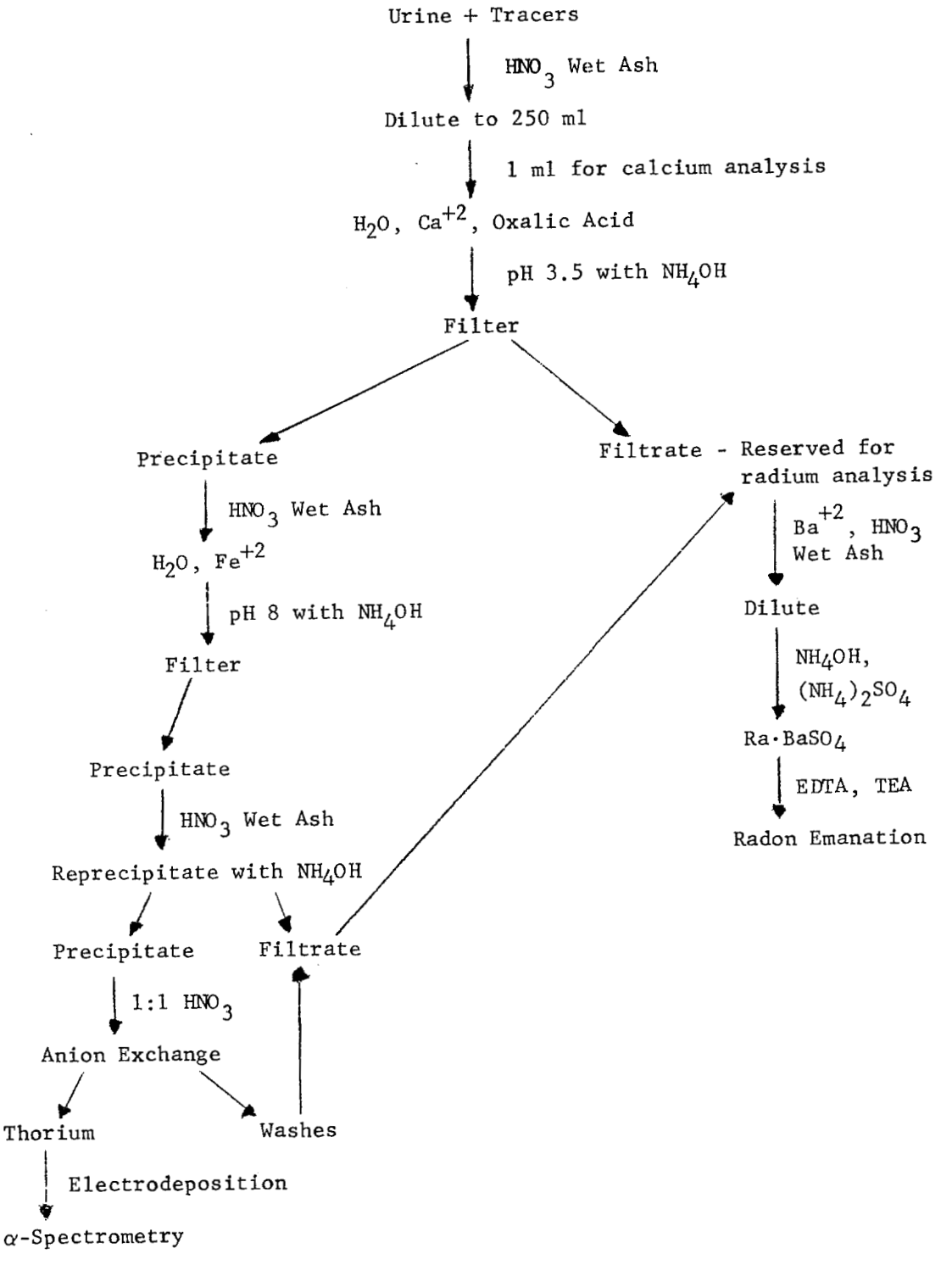

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Table 1

Spectrophotometry vs α-Spectrometry for Th in Urine

Sample	μg Th/sample			
	Spectrophotometry		α-Spectrometry (Th-232)	
	Uncorrected	Corrected	Uncorrected	Corrected
Control 1	No Response	--	0.01 ± .01	1.8 ± 1.2
Control 2	No Response	--	0.19 ± .03	1.9 ± .3
Control 3	No Response	--	0.06 ± .04	0.6 ± .4
CaEDTA Chelation	No Response	--	0.31 ± .08	5.4 ± 1.4
CaEDTA Chelation	0.9	3.2	1.1 ± .3	4.3 ± 1.0
CaEDTA Chelation	No Response	--	0.20 ± .03	5.4 ± .8
CaEDTA Chelation	3.1	6.1	2.2 ± .5	4.6 ± 1.0

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Table 2

Control Chelation Regimes

Collection Date	Regime	Volume / 24 h (ℓ)	mg Ca / 24 h	dpm/24 h Th-232	dpm/24 h Th-228	dpm/24 h Th-230	Th-228 / Th-232	Th-230 / Th-232
28-29 Jan 75	Control	2.22	80	0.4 ± .3	<1.2	<0.4	~3	<1
29-30 Jan 75	Control	1.59	105	0.5 ± .1	1.9 ± .8	0.3 ± .4	4.2	0.4
30-31 Jan 75	Control	1.62	70	0.2 ± .1	0.9 ± .4	0.4 ± .2	6.3	2.4

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Table 3

Ca EDTA Chelation Regimes

Collection Date	Regime	Volume / 24 h (ℓ)	mg Ca / 24 h	dpm/24 h Th-232	dpm/24 h Th-228	dpm/24 h Th-230	Th-228 / Th-232	Th-230 / Th-232
2 - 3 Feb 75	Ca EDTA - 1st day - 1 g/d	--	--	--	--	--	--	--
3 - 4 Feb 75	Ca EDTA - 2nd day - 1 g/d	1.94	98	1.3 ± .3	3.3 ± 1.2	1.3 ± .6	2.5	1.0
4 - 5 Feb 75	Ca EDTA - 3rd day - 1 g/d	--	--	--	--	--	--	--
5 - 6 Feb 75	Ca EDTA - 4th day - 1 g/d	--	--	--	--	--	--	--
6 - 7 Feb 75	Ca EDTA - 5th day - 1 g/d	2.82	142	1.0 ± .3	1.9 ± .7	0.6 ± .2	1.9	0.6
7 - 8 Feb 75	Ca EDTA - 6th day - 1 g/d	--	--	--	--	--	--	--
8 - 9 Feb 75	Ca EDTA - 7th day - 1 g/d	--	--	--	--	--	--	--
9-10 Feb 75	Ca EDTA - 8th day - 1 g/d	3.52	145	1.3 ± .2	1.3 ± .2	1.2 ± .2	1.0	0.9
10-11 Feb 75	Ca EDTA - 9th day - 1 g/d	--	--	--	--	--	--	--
11-12 Feb 75	Ca EDTA - 10th day - 1 g/d - 10 g total	1.86	145	1.6 ± .4	1.3 ± .3	0.5 ± .2	0.8	0.3
7 - 8 Apr 75	Ca EDTA - 1st day - 2 g/d	--	--	--	--	--	--	--
8 - 9 Apr 75	Ca EDTA - 2nd day - 2 g/d	--	--	--	--	--	--	--
9-10 Apr 75	Ca EDTA - 3rd day - 2 g/d	1.74	207	2.1 ± .1	3.6 ± .3	0.7 ± .1	1.7	0.3
10-11 Apr 75	Ca EDTA - 4th day - 2 g/d	--	--	--	--	--	--	--
11-12 Apr 75	Ca EDTA - 5th day - 2 g/d - 10 g total	1.75	187	1.5 ± .1	1.9 ± .1	0.8 ± .1	1.3	0.5
12-13 Apr 75	Post Ca EDTA - 1st day	--	--	--	--	--	--	--
13-14 Apr 75	Post Ca EDTA - 2nd day	2.08	83	1.7 ± .2	1.6 ± .4	0.4 ± .1	0.9	0.2
14-15 Apr 75	Post Ca EDTA - 3rd day	--	--	--	--	--	--	--
15-16 Apr 75	Post Ca EDTA - 4th day	2.59	210	6.5 ± .6	8.6 ± .2	4.8 ± .5	1.3	0.7
16-17 Apr 75	Post Ca EDTA - 5th day	--	--	--	--	--	--	--
17-18 Apr 75	Post Ca EDTA - 6th day	1.76	182	2.0 ± .3	2.7 ± .4	0.4 ± .2	1.4	0.2
18-19 Apr 75	Post Ca EDTA - 7th day	--	--	--	--	--	--	--
19-20 Apr 75	Post Ca EDTA - 8th day	2.11	43	0.7 ± .1	1.0 ± .1	0.1 ± .1	1.4	0.1
20-21 Apr 75	Post Ca EDTA - 9th day	--	--	--	--	--	--	--
21-22 Apr 75	Post Ca EDTA - 10th day	--	--	--	--	--	--	--
22-23 Apr 75	Post Ca EDTA - 11th day	2.10	--	0.7 ± .1	14.7 ± .4	<0.1	21	<0.1

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Table 4

Ca DTPA Chelation Regimes

Collection Date	Regime	Volume / 24 h (ℓ)	mg Ca / 24 h	dpm/24 h Th-232	dpm/24 h Th-228	dpm/24 h Th-230	Th-228 / Th-232	Th-230 / Th-232
8 - 9 May 75	Ca DTPA - 1 g/d - 1 g total	--	--	--	--	--	--	--
9-10 May 75	Post Ca DTPA - 1st day	2.07	--	1.2 ± .1	4.3 ± .1	0.2 ± .1	3.5	0.2
10-11 May 75	Post Ca DTPA - 2nd day	--	--	--	--	--	--	--
11-12 May 75	Post Ca DTPA - 3rd day	1.78	--	1.0 ± .3	2.8 ± 1.3	<0.7	2.7	<0.7
12-13 May 75	Post Ca DTPA - 4th day	--	--	--	--	--	--	--
13-14 May 75	Post Ca DTPA - 5th day	2.06	--	0.7 ± .2	2.3 ± .3	0.4 ± .1	3.5	0.6
14-15 May 75	Post Ca DTPA - 6th day	2.13	--	4.3 ± 1.3	30 ± 4	0.9 ± .8	7.1	0.2
15-16 May 75	Ca DTPA - 1 g/d - 1 g total	--	--	--	--	--	--	--
16-17 May 75	Post Ca DTPA - 1st day	2.15	--	7.7 ± .3	8.6 ± .4	1.1 ± .1	1.1	0.1
17-18 May 75	Post Ca DTPA - 2nd day	--	--	--	--	--	--	--
18-19 May 75	Post Ca DTPA - 3rd day	1.92	--	1.6 ± .2	21 ± 1	0.3 ± .1	13.1	0.2
19-20 May 75	Ca DTPA - 1 g/d - 1 g total	--	--	--	--	--	--	--
20-21 May 75	Post Ca DTPA - 1st day	2.09	--	10.9 ± .3	14 ± 1	1.8 ± .1	1.3	0.2
21-22 May 75	Post Ca DTPA - 2nd day	--	--	--	--	--	--	--
22-23 May 75	Post Ca DTPA - 3rd day	2.13	--	1.4 ± .1	1.5 ± .2	0.5 ± .1	1.1	0.4
23-24 May 75	Post Ca DTPA - 4th day	--	--	--	--	--	--	--
24-25 May 75	Post Ca DTPA - 5th day	2.08	--	1.0 ± .1	5.2 ± .3	0.4 ± .1	5.2	0.4
25-26 May 75	Post Ca DTPA - 6th day	--	--	--	--	--	--	--

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Table 5

Ca DTPA Chelation Regimes

Collection Date		Volume / 24 h (ℓ)	mg Ca / 24 h	dpm/24 h Th-232	dpm/24 h Th-228	dpm/24 h Th-230	Th-228 / Th-232	Th-230 / Th-232
7 - 8 July 75	Ca DTPA - 1 g/d	--	--	--	--	--	--	--
8 - 9 July 75	Post Ca DTPA	2.08	265	2.4 ± .1	2.6 ± .1	0.5 ± .1	1.1	0.2
9-10 July 75	Ca DTPA - 1 g/d	2.15	355	5.3 ± .2	7.1 ± .2	0.9 ± .1	1.4	0.2
10-11 July 75	Post Ca DTPA	2.00	195	2.7 ± .1	1.8 ± .1	0.5 ± .1	0.7	0.2
11-12 July 75	Ca DTPA - 1 g/d - 3 g total	1.98	430	4.9 ± .2	5.9 ± .3	0.8 ± .1	1.2	0.2
12-13 July 75	Post Ca DTPA - 1st day	2.03	205	2.9 ± .1	2.9 ± .1	0.7 ± .1	1.0	0.2
13-14 July 75	Post Ca DTPA - 2nd day	1.95	175	0.8 ± .1	1.3 ± .1	0.5 ± .1	1.6	0.6
14-15 July 75	Post Ca DTPA - 3rd day	1.86	185	1.1 ± .1	1.6 ± .1	0.4 ± .1	1.4	0.4
15-16 July 75	Post Ca DTPA - 4th day	1.98	265	1.0 ± .1	1.0 ± .1	0.2 ± .1	1.0	0.2
16-17 July 75	Post Ca DTPA - 5th day	1.87	225	0.9 ± .1	4.6 ± .2	0.2 ± .1	5.2	0.3
21-22 July 75	Ca DTPA - 1 g/d	--	--	--	--	--	--	--
22-23 July 75	Post Ca DTPA	3.02	205	1.1 ± .1	1.6 ± .1	0.2 ± .1	1.5	0.2
23-24 July 75	Ca DTPA - 1 g/d	1.99	253	6.3 ± .3	7.7 ± .3	0.9 ± .1	1.2	0.1
24-25 July 75	Post Ca DTPA	1.95	196	1.8 ± .1	4.4 ± .2	0.4 ± .1	2.5	0.2
25-26 July 75	Ca DTPA - 1 g/d - 3 g total	2.01	287	5.8 ± .2	7.2 ± .3	0.7 ± .1	1.2	0.1
26-27 July 75	Post Ca DTPA - 1st day	2.70	155	3.9 ± .2	2.9 ± .2	0.5 ± .1	0.8	0.1
27-28 July 75	Post Ca DTPA - 2nd day	--	--	--	--	--	--	--
28-29 July 75	Post Ca DTPA - 3rd day	1.93	41	1.0 ± .1	1.3 ± .1	0.3 ± .1	1.3	0.3

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