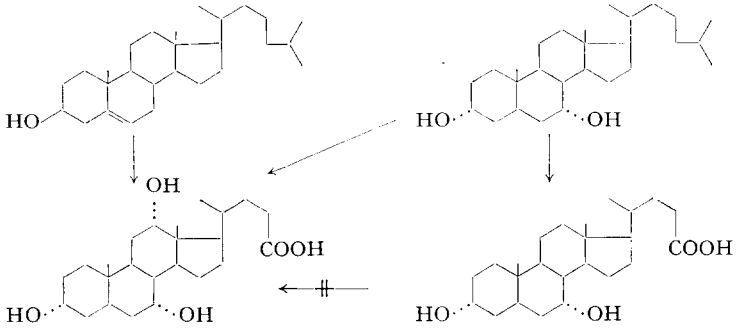

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The distribution of radioactivity in monkey serum lipids following feeding of triolein-^{3}H

BERGSTRÖM *et al.*[1] have recently reported on the distribution of triolein in the rat following the feeding of triolein-^{14}C. The partition of this triglyceride in the serum of monkeys has been measured following a feeding[2] of triolein-^{3}H and is the basis of this brief report.

Triolein-^{3}H (0.75 g, 16.9 μc/g) was administered by stomach tube to two male Java monkeys weighing 6 pounds. The animals were placed in individual cages and bled at intervals starting at 2 hours after feeding and continuing for 3 and 7 days respectively. The serum obtained after bleeding was deproteinized with methylal-methanol 4:1[3] and chromatographed on a silicic acid column following the method of FILLERUP AND MEAD[4]. In the first case sterol ester, neutral fat, sterol, phospho-lipid and fatty acid fractions were collected and assayed for radioactivity. In the second case only the neutral fat and fatty acid fractions were counted. Tritium assay was carried out using the liquid scintillation counting technique employing 2,5-diphenyloxazole in toluene[5] and using an LP-2 double channel liquid phosphor counter (Technical Measurement Corp., New Haven, Conn.)*. All counts were carried out for 30–60 minutes, with the total sample being assayed each time. Under the conditions used, the background was 47 counts per minute. The data are given in Tables I and II.

Feces from Monkey No. 1 were collected at 24, 48 and 72 hours; these samples contained 0.2, 0.5 and 0.4% of the administered counts, respectively. From our data it is apparent that most of the triolein activity fed was present in the neutral fat and fatty acid fractions of the serum lipids, with peak uptake occurring between 2 and 6 hours after feeding. The specific activity values for the fatty acid fractions are open to question because the amounts of fatty acid are minute and a small weighing error could result in a large specific activity error.

TABLE I

ACTIVITY RECOVERED FROM SERUM LIPIDS OF MONKEYS FED TRIOLEIN-^{3}H

Monkey 1

Time (h)	Fraction									
	Sterol ester		Neutral fat		Fatty acid		Sterol		Phospholipid	
	c.p.m.	c.p.m./mg	c.p.m.	c.p.m./mg	c.p.m.	c.p.m./mg	c.p.m.	c.p.m./mg	c.p.m.	c.p.m./mg
2	12	5	94	85	NS*	—	3	8	14	8
4	27	6	454	138	180	21	6	4	37	7
6	26	9	188	28	98	45	10	6	2	0
8	8	11	34	5	NS*	—	19	21	20	13
12	4	4	53	12	23	14	14	16	26	14
24	18	11	71	18	20	13	2	2	16	9
48	15	4	17	10	6	5	0	0	9	5
72	NS*	—	31	4	8	3	11	9	10	4

* NS = No sample.

TABLE II

ACTIVITY RECOVERED FROM SERUM LIPIDS OF MONKEYS FED TRIOLEIN-^{3}H

Monkey 2

Time (h)	Fraction			
	Neutral fat		Fatty acid	
	c.p.m.	c.p.m./mg	c.p.m.	c.p.m./mg
2	192	87	32	159
4	88	44	36	90
6	114	76	24	31
8	70	24	48	96
24	50	63	20	28
48	19	15	NS*	—
72	28	28	21	43
96	32	30	NS*	—
120	41	68	14	48
144	46	76	42	139
168	Lost	—	31	154

* NS = No sample.

These data are in substantial agreement with the findings of BERGSTRÖM and his co-workers, who detected 66% of the activity of the administered triolein-^{14}C in the lymph fatty acid of their rats, with 98% of this activity being present in the glyceride fatty acids.

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