

RETENTION MECHANISM OF SOME IODO CHOLESTEROL
DERIVATIVES IN ADRENAL GLANDS OF MICE

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Adrenal imaging agents such as 19-iodocholesterol and 6-iodomethyl-19-norcholest-5(10)-en-3 β -01(NCL-6-I) are retained by the adrenals much longer than by other organs, and this results in high T/NT ratio. This long-term retention in the adrenals of these compounds seems to be partly due to their esterification in the adrenals, as suggested by Counsell et al.. In order to make clear the retention mechanism of iodo cholesterols in adrenal glands, we have studied the stability of C-I bond for cholesteryl iodide (CL-3-I), and determined the average retention times of NCL-6-I and CL-3-I in the adrenals and fat tissues of mice.

(1) Determination of the chemical form of iodine by double labelling method: It is reported that NCL-6-I was accumulated in adrenal glands more actively than bromine compounds. In view of the longer retention of the iodine compound in adrenal glands, there is some possibility that the C-I bond could be ruptured in them, and that the liberated iodine would be fixed covalently to unsaturated fatty acids of adrenal glands. We prepared ^{125}I -[4- ^{14}C]-cholesteryl iodide, and compared their retention by the adrenals of mice for up to 30 days. The result, that the clearance rate of ^{125}I activity from the adrenals was almost the same as that of ^{14}C activity, made this retention mechanism a minor factor in the case of CL-3-I.

(2) Retention by the adrenals and fat tissues of NCL-6-I and CL-3-I: It is probable that the adrenal retention of iodo-cholesterols is quite similar to the fat retention of lipophilic compounds such as PCB and DDT. The average retention time in the adrenals of NCL-6-I and CL-3-I was, respectively, 11 and 5.6 days. That value in fat tissues of CL-3-I was more than 20 days, but that of NCL-6-I was only 6.0 days. Therefore, iodo-cholesterols are thought to be retained by the adrenals in a quite specific way.

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