

**CONCENTRATION OF SALIVARY IODIDE:
A COMPARATIVE STUDY**

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Iodide has been shown to be selectively concentrated in the saliva of humans (Schiff, Stevens, Molle, Steinberg, Kumpe & Stewart, 1947), hamsters (Cohen, Logothetopoulos & Myant, 1955), mice (Logothetopoulos & Myant, 1956*a, b*) and dogs (D. D. Adams, G. A. Robinson & G. W. Stavrazy, personal communication). In each of these species, within a few minutes of an intravenous injection of radio-iodide, the concentration in the mixed saliva may reach a value of more than twenty times the concentration in the serum. There have been several attempts to identify the cells concerned in this mechanism. Honour, Myant & Rowlands (1952) showed that the saliva:serum radio-iodide concentration ratio is at least as high for saliva collected from the opening of the human parotid duct as that for mixed saliva. They concluded that the parotid gland concentrates iodide, but they could not exclude the possibility that the submandibular and sublingual glands also contribute to the high concentration of iodide in the mixed saliva. In hamsters the intra-lobular (or proximal) ducts of the submandibular glands have been shown to concentrate radio-iodide (Cohen *et al.* 1955). Selective concentration of radio-iodide does not occur in the mixed saliva or the salivary glands of rats (Logothetopoulos & Myant, 1956*b*). We have continued these investigations and have extended them to several other species.

TABLE 1. Salivary gland:serum ¹³¹I concentration ratios

Species	Parotid	Submandibular	Sublingual	Soft palate
Cat	0.80 ± 0.14	0.67 ± 0.06	1.65 ± 0.28	1.71 ± 0.14
Dog	1.21 ± 0.14	0.77 ± 0.20	0.83 ± 0.24	0.63 ± 0.34
Rabbit	0.62 ± 0.04	0.65 ± 0.14	0.54	2.20 ± 0.45
Guinea-pig	0.79 ± 0.17	0.64 ± 0.10	0.43 ± 0.12	0.83 ± 0.21
Cotton-rat	1.39 ± 0.14	0.45 ± 0.02	0.49 ± 0.07	0.86 ± 0.10
Rat	0.34 ± 0.02	0.43 ± 0.06	0.22 ± 0.07	0.41 ± 0.01
Mouse	0.59 ± 0.02	5.1 ± 0.27	0.53 ± 0.02	0.54 ± 0.04
Hamster	0.80 ± 0.03	5.1 ± 0.63	0.41 ± 0.02	0.54
<i>Mastomys</i>	0.84	3.41 ± 0.29	0.44	—
Man	4.6	6.9	11.2	—

The concentration of ¹³¹I in a gland is estimated in the liquid obtained by digesting a biopsy a biopsy sample of the gland with NaOH.