gross area than in the frog.

It seems clear that the dogfish gastric mucosa is CO_2-limited in 5 percent CO_2, giving higher J_H and a significant PD in 10 percent CO_2. This corroborates the hypothesis explaining the CO_2 effect in frog stomach, and suggests that 10 percent CO_2 can be used to further stimulate H^+ secretion in dogfish as well as frog. Given these results, HCl secretion in the dogfish gastric mucosa can no longer be regarded as electrically neutral and thus unique.

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1974 #20

THE ROLE OF C_3-OH FOR BOTH TRANSPORT PATHWAYS OF D-GLUCOSE IN RENAL TUBULAR CELLS OF THE FLOUNDER (*Pseudopleuronectes americanus*)

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Evidence has been presented previously (A. Kleinzeller and E. McAvoy, J. Gen. Physiol. 62, 164, 1973; A. Kleinzeller, P.M. Griffin, R. Rittmaster, and E.M. McAvoy, Bull. MDIBL 13, 67, 1973) that at the antiluminal face of the flounder renal tubule, D-glucose is transported into the cells by two distinct pathways: (1) a pathway shared with methyl-D-glucopyranoside, requiring a free C_2-OH in the D-gluco-configuration; and (2) a pathway shared with 2-deoxy-D-glucose and D-mannose, requiring a free C_1-OH. We have also found that 3-O-methyl-D-glucose slightly inhibited the entry of methyl-α-D-glucopyranoside into the renal cells suggesting competition for a shared transport site. Such result raised the possibility that a free hydroxyl on C_3 of the sugar molecule is not required for interaction with

the carrier for the first of the above transport pathways of glucose. The possible role of C_3-OH for the interaction of the above sugars with the respective carriers has now been investigated using 3-deoxy-D-glucose and D-allose (with an inverted position of -OH on C_3) as potential inhibitors.

Teased renal tubules of the winter flounder (*Pseudopleuronectes americanus*) were employed as described in previous studies. The tubules were incubated at 15°C in the presence of 0.1 and 0.5 mM methyl-α-D-gluco-pyranoside, D-glucose, 2-deoxy-D-glucose and D-mannose and their cellular uptake was measured. As compared with these controls, 5 mM 3-deoxy-D-glucose or D-allose had no inhibitory effect. This result thus establishes a mandatory role of C_3-OH in the D-gluco-configuration for an interaction with both carriers of D-glucose transport.

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INDUCTION OF THE POLYAMINE BIOSYNTHETIC ENZYMES BY METHYLMERCURY

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The toxicity and long retention time of methylmercury is well known. Not as well known is the fact that methylmercury also induces hepatic protein synthesis, accompanied by increases in ribosomes, ribosomal subunits, and polyribosomes within eight days of treatment in rats (Biochem. Biophys. Res. Commun. 44: 1552-1558, 1971). The polyamines, putrescine, spermidine, and spermine may play a role in this hypertrophy process by regulating RNA metabolism. Ornithine decarboxylase (ODC), the enzyme catalyzing the