histidine decarboxylase in the gastric mucosa of many mammilian species besides other criteria supports the hypothesis of a physiological role of histamine as chemostimulator of the gastric secretion.

Table. *Properties of the specific histidine decarboxylase of the gastric mucosa*

Species	pH-optimum	K_m [M]	Activation (+) or inhibition (−) in %			
			Benzene	α-MD	α-MH	PALP
Man	6.8—7.0	5.7×10^{-5}	∅	∅		+ 50
Pig	6.9—7.2	2.0×10^{-5}	− 60	∅	− 100	+ 220
Cow	6.6; 7.2	1.3×10^{-5}	∅	∅		
Rabbit	6.4	1.0×10^{-4}	∅	∅	− 100	+ 110
Guinea-pig	6.3	3.3×10^{-5}	− 80	∅	− 100	
Rat	5.7	2.5×10^{-4}	− 40	∅	− 100	+ 110

Mean values from 2—3 determinations. K_m derived from Lineweaver-Burk-plots [1]. Benzene 20 mg/3 ml, α-methyldopa (α-MD) 1×10^{-3} M, α-methylhistidine (α-MH) $1-5\times10^{-2}$ M, pyridoxal-5′-phosphate (PALP) $1.25-3.13\times10^{-5}$ M as final concentrations.

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Biochemical and Histochemical Studies on Histamine in the Digestive Tract: Distribution in Different Chordates and Cellular Stores in the Dog*

Biochemische und histochemische Untersuchungen zur Lokalisation von Histamin im Verdauungstrakt

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The histamine contents of the stomach and other organs of the digestive tract of chordates were determined by two fluorometric assay procedures [2,3] and by the biological assay of histamine on the isolated guinea-pig ileum, the response of which could be inhibited completely by antazoline. As mean values (μg histamine dihydrochloride/g wet weight) were found in the corpus and antral mucosa: man 17.3, 5.3; dog: 88.0, 53.0; pig: 99.7, 102.0; cow (rennet-bag): 43.6, 30.0; guinea-pig: 12.7, 12.5; hen: 41.5, 21.9; pigeon (corpus): 13.9; tortoise: 11.2, 3.0; lizard: 15.6, 15.6:

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frog (whole stomach): 2.5; trout: 5.8, 5.4; catfish: 9.1, 1.9; dogfish: 7.4, 7.8; thornback (raja stellaris): 4.8, 5.5; ciona intestinalis (whole stomach): 1.8; halocynthia papillosa (whole stomach): 1.2.

In the dog the histamine contents of tongue, soft palate, submaxillary gland and stomach were compared with the density of mast cells (number of cells/mm^2). With the exception of the submaxillary gland, where only 50—60 per cent of the histamine were localized in mast cells, in the other organs histamine was stored only in mast cells (the regression line between histamine contents and the densities of mast cells passed through the origin). This could be confirmed by the highly significant correlation between histamine release and mast cell degranulation after treatment with 48/80 for 3 days (i.m. 2.5, 3.5 and 4.0 mg/kg) in the tongue and soft palate. In the gastric mucosa the histamine content increased by about 20 per cent, the density of mast cells decreased by 20—30 per cent.

The histamine content of the single mast cell in the gastric mucosa, calculated from histamine content/g and the number of mast cells/cm^3 of tissue, increased in the gastric mucosa of fundus and corpus by 85 and 55 per cent after 48/80. Therefore a storage of histamine in these mast cells is assumed. By 30—45 sec staining with 0.1 per cent toluidine blue at different pH values (pH 4.0, 1.5, 0.5, 0.3) it could be shown that only 20 per cent of the mast cells in the untreated and none in the 48/80-treated dogs were stained at pH 0.3. Therefore the gastric mucosa of dogs contained by about 20 per cent typical mast cells and by about 80 per cent "atypical" mast cells [1], which were able to store histamine released by 48/80 from typical mast cells.

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Untersuchungen zu der durch N_1-(n-Butyl)-biguanid (Buformin) im Tierexperiment verursachten Hypoglykämie

Investigations on the Hypoglycemia in the Animal Experiment Induced by N_1-(n-Butyl)-biguanid

W. Losert, O. Loge und E. Schillinger

An Ratten wurde untersucht, ob die im Tierexperiment nach Gabe von Biguaniden auftretende Hypoglykämie durch einen direkten Eingriff in