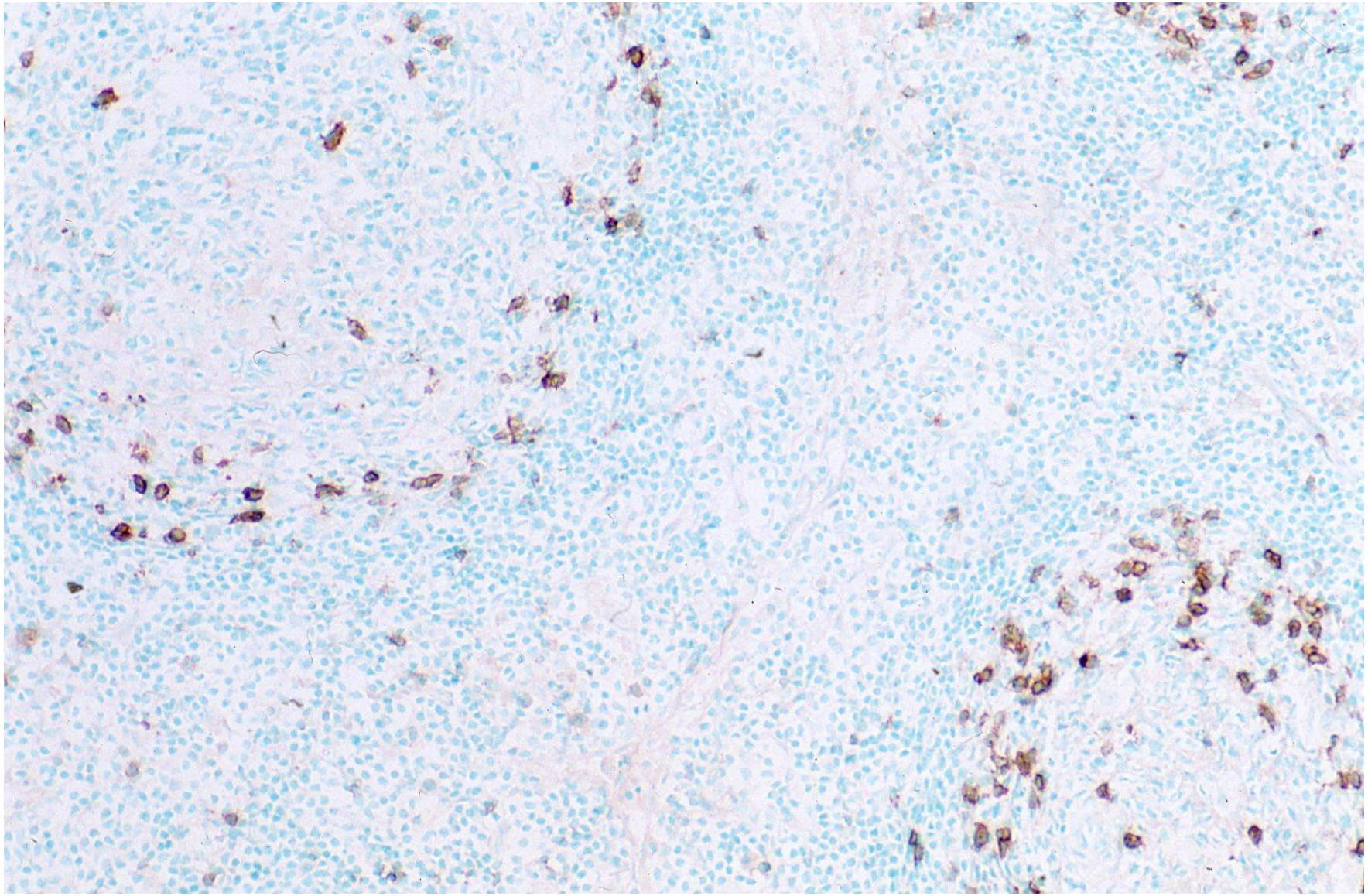
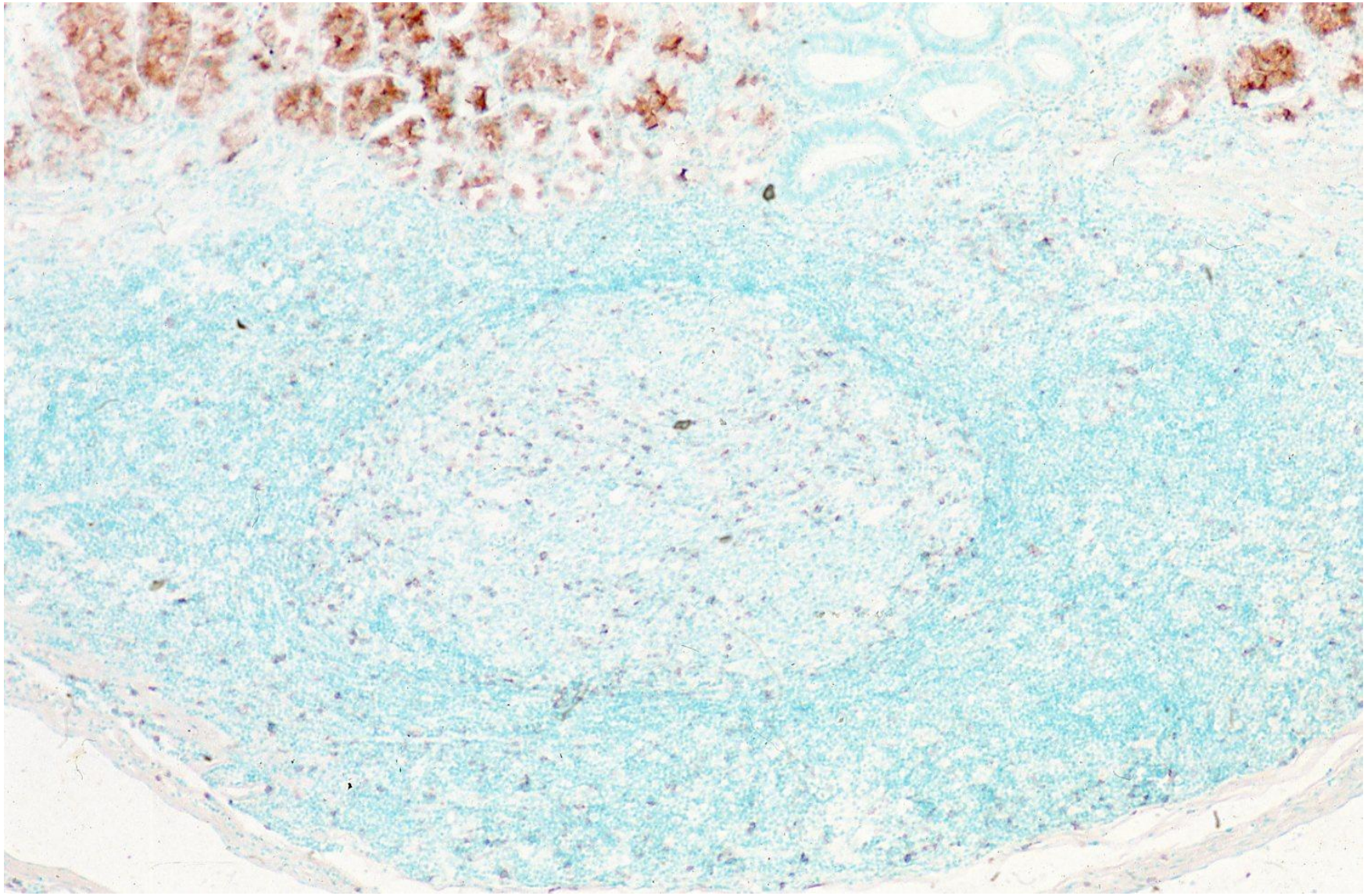
Leu 7 (CD57) as a neuroendocrine marker

Leu 7 antigen (CD57, nicknamed as HNK-1), a surface marker for lymphoid cells expressing natural killer (NK) activity (large granular lymphocytes), belongs to a 110 kDa membrane glycoprotein, containing sulfated glucuronic acid residues. The Leu 7 antigen is also expressed in peripheral nerve fibers and normal and neoplastic neuroendocrine cells in both frozen and routinely paraffin-embedded specimens by using a mouse monoclonal antibody. Forty-nine (71%) of 69 neuroendocrine tumors showed varying degrees of Leu 7 immunoreactivity. In the tumors of the lung and pancreas, the number of Leu 7-positive cells was intimately related to the aggressiveness of the tumors: the more malignant, the less the number of Leu 7-positive cells was. Leu 7 antigen was also demonstrated in normal fundic gland cells, thymic epithelial cells and colloid materials in normal thyroid follicles.

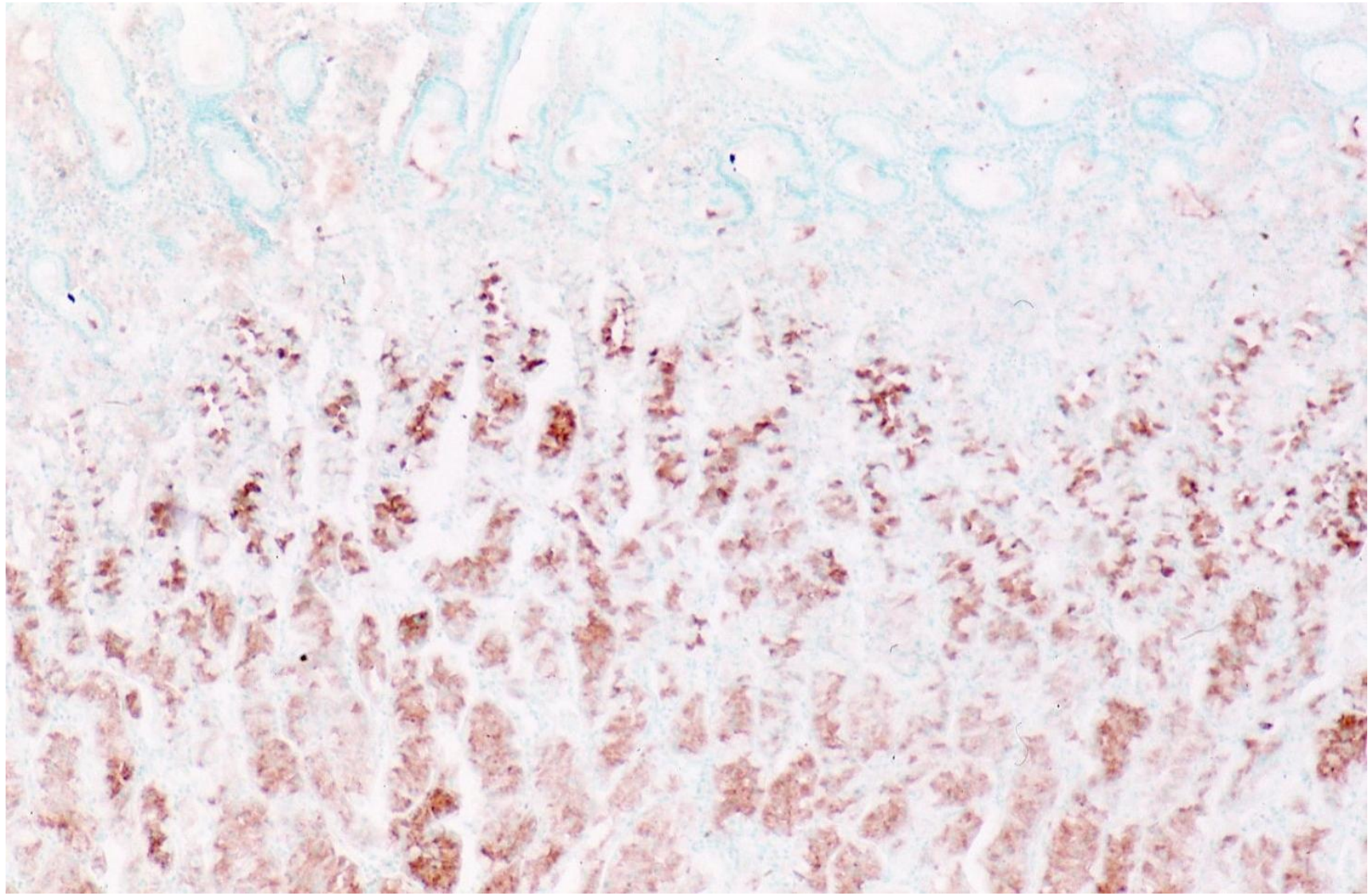
Ref.: Tsutsumi Y. Leu 7 immunoreactivity as histochemical marker for paraffin-embedded neuroendocrine tumors. Acta Histochem Cytochem 1984; 17(1): 15-21. doi: 10.1267/ahc.17.15



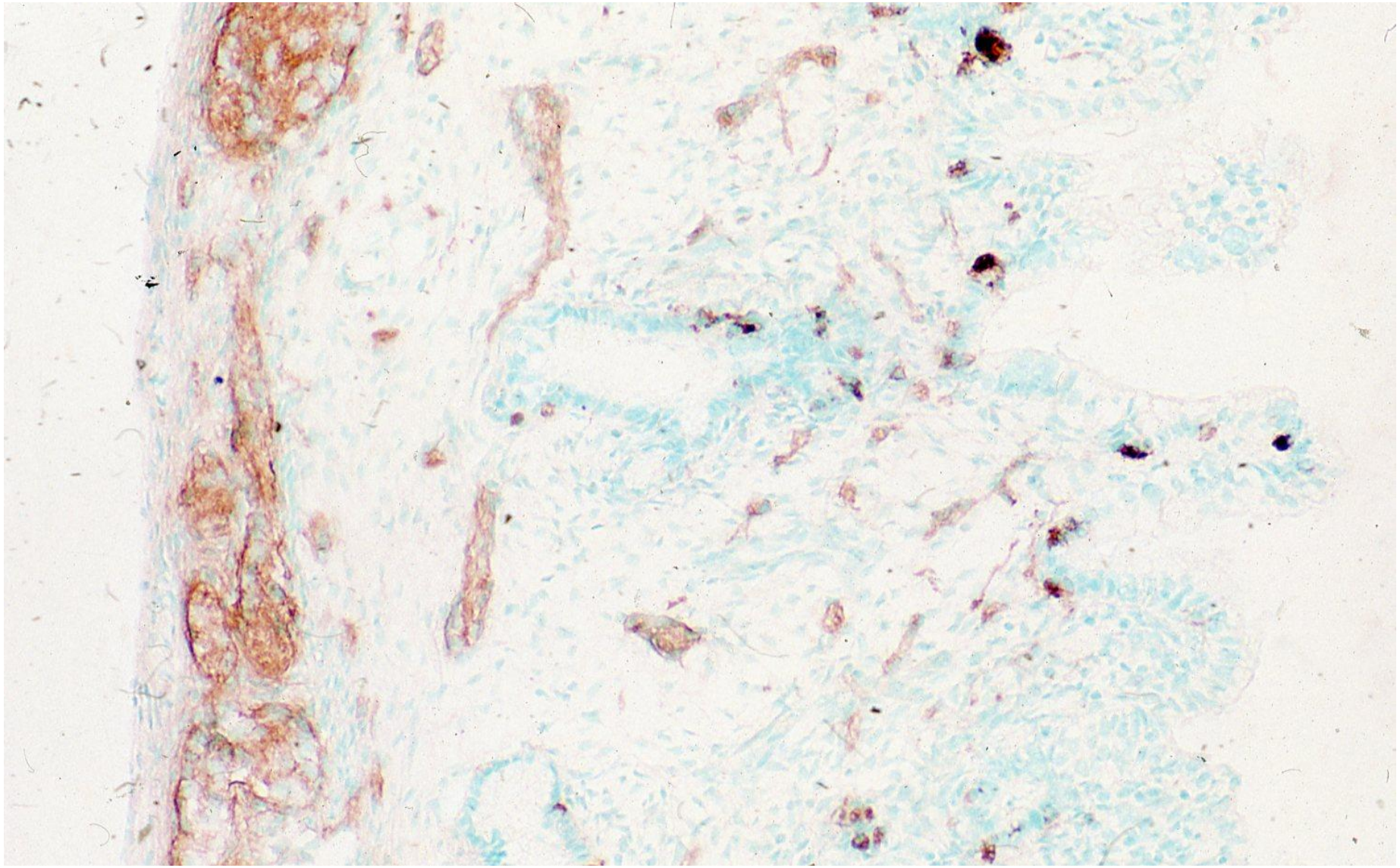
Leu 7 (CD57) in reactive lymph node. NK cells are mainly distributed at the peripheral zone of the germinal center.



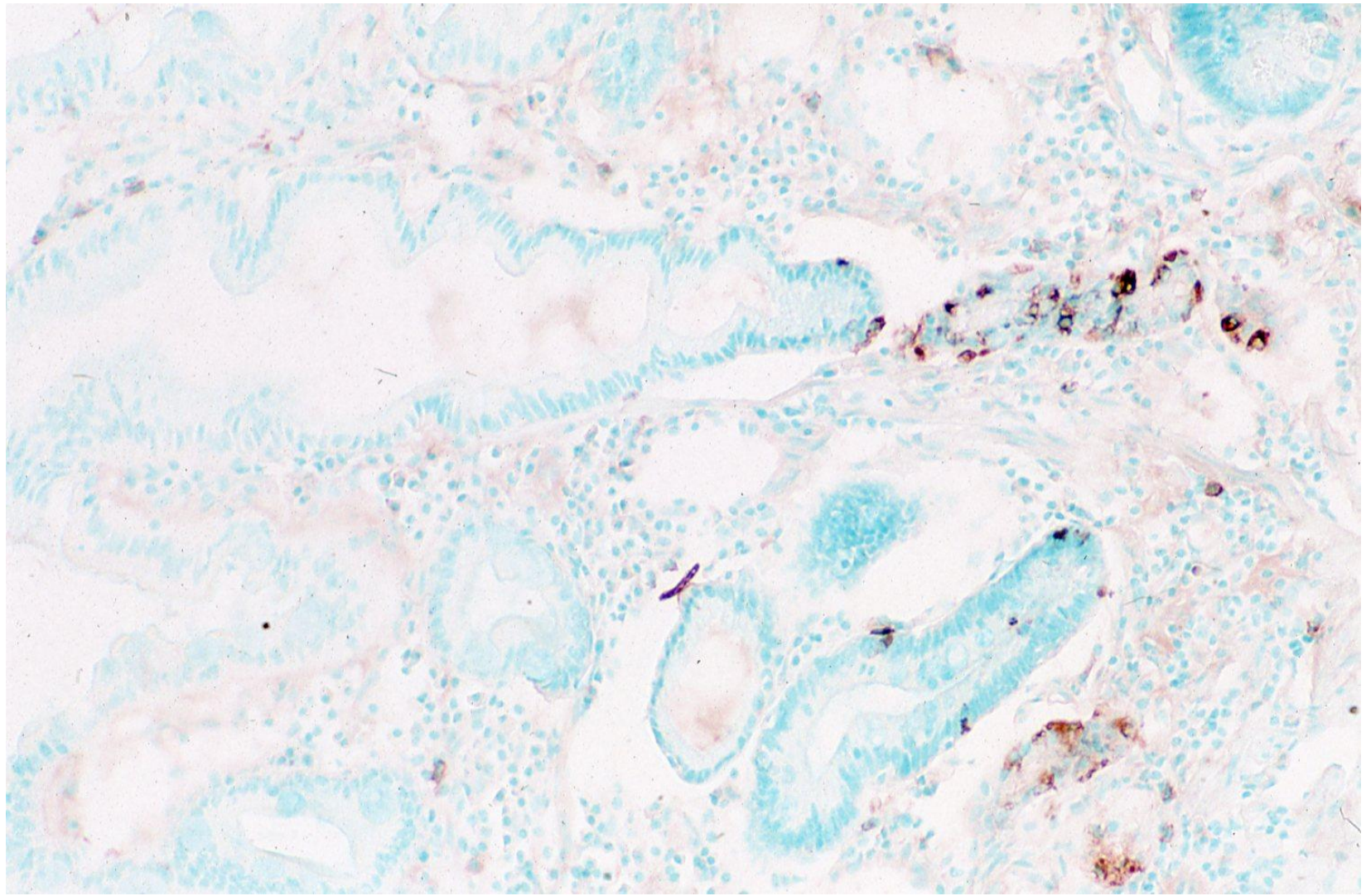
Leu 7 (CD57) in reactive lymphoid apparatus in the stomach. NK cells are distributed both in the germinal center and in the perifollicular zone. Normal fundic gland cells also express Leu 7 antigen.



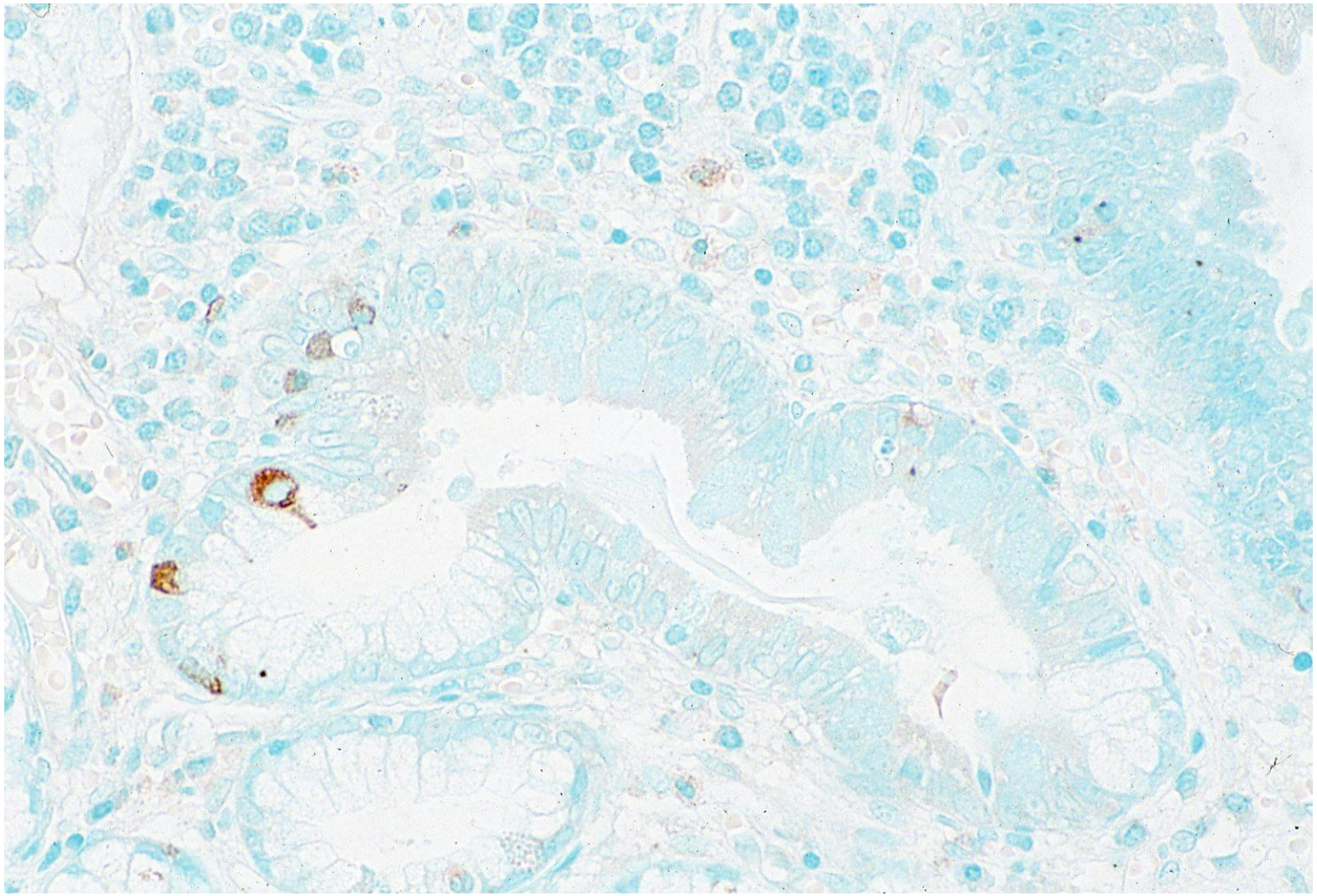
Leu 7 (CD57) in normal fundic gland cells. Most glandular cells express Leu 7 antigen in the cytoplasm. The surface mucous epithelial cells are negative for Leu 7.



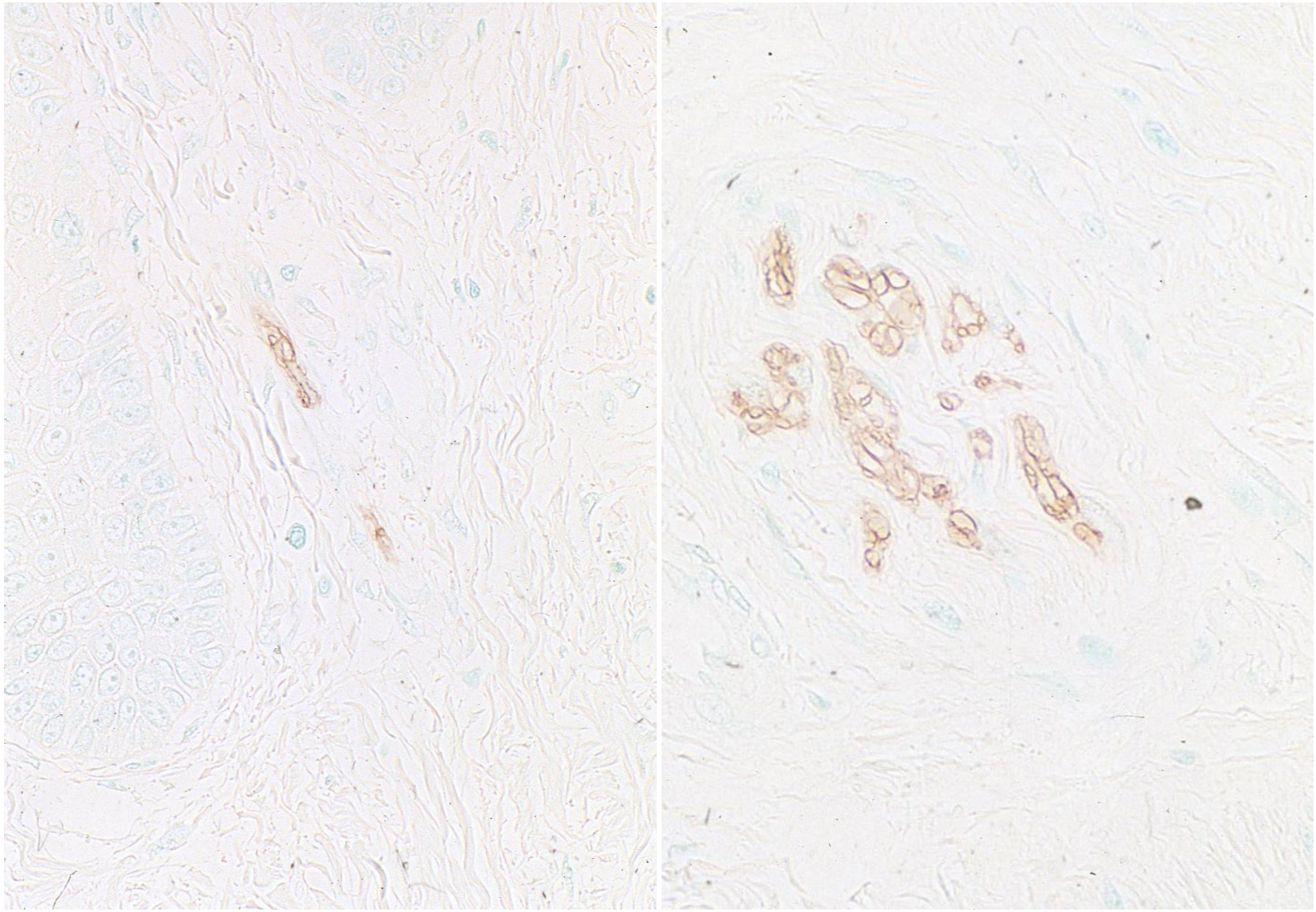
Leu 7 (CD57) in fetal gastric pylorus at the 12th week of gestation. The peripheral nerve fibers, including Auerbach's nerve plexus and neuroendocrine cells scattered among the epithelial cells are immunoreactive for Leu 7 (CD57).



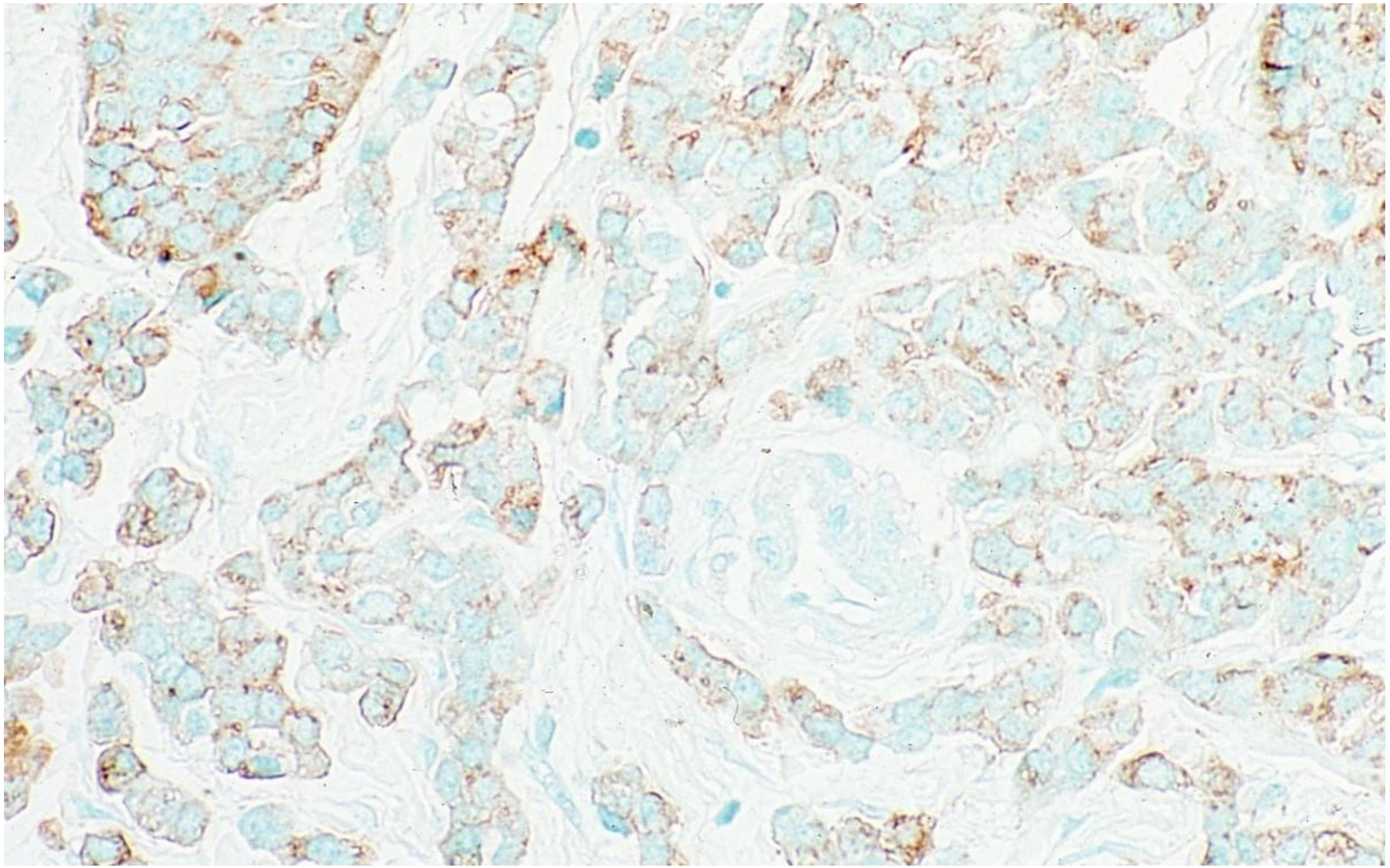
Leu 7 (CD57) in normal adult antral mucosa. Leu 7-immunoreactive neuroendocrine cells are focally clustered. Lymphoid cells scattered in the lamina propria mucosae are also positively labeled.



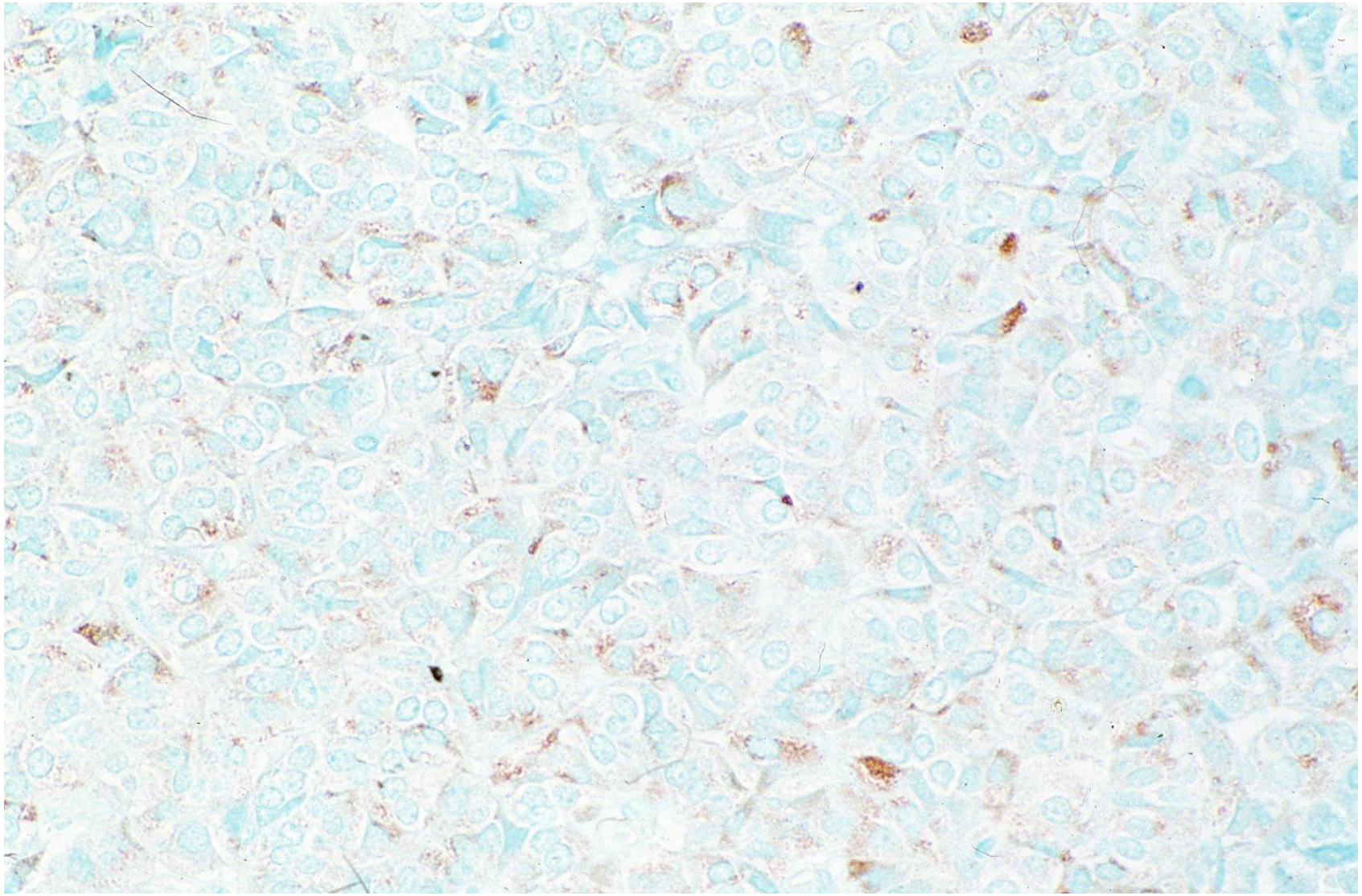
Leu 7 (CD57) in normal adult duodenal mucosa. Neuroendocrine cells scattered among the epithelial cells are immunoreactive for Leu 7 (CD57). Lymphoid cells scattered in the lamina propria mucosae are also positively labeled.



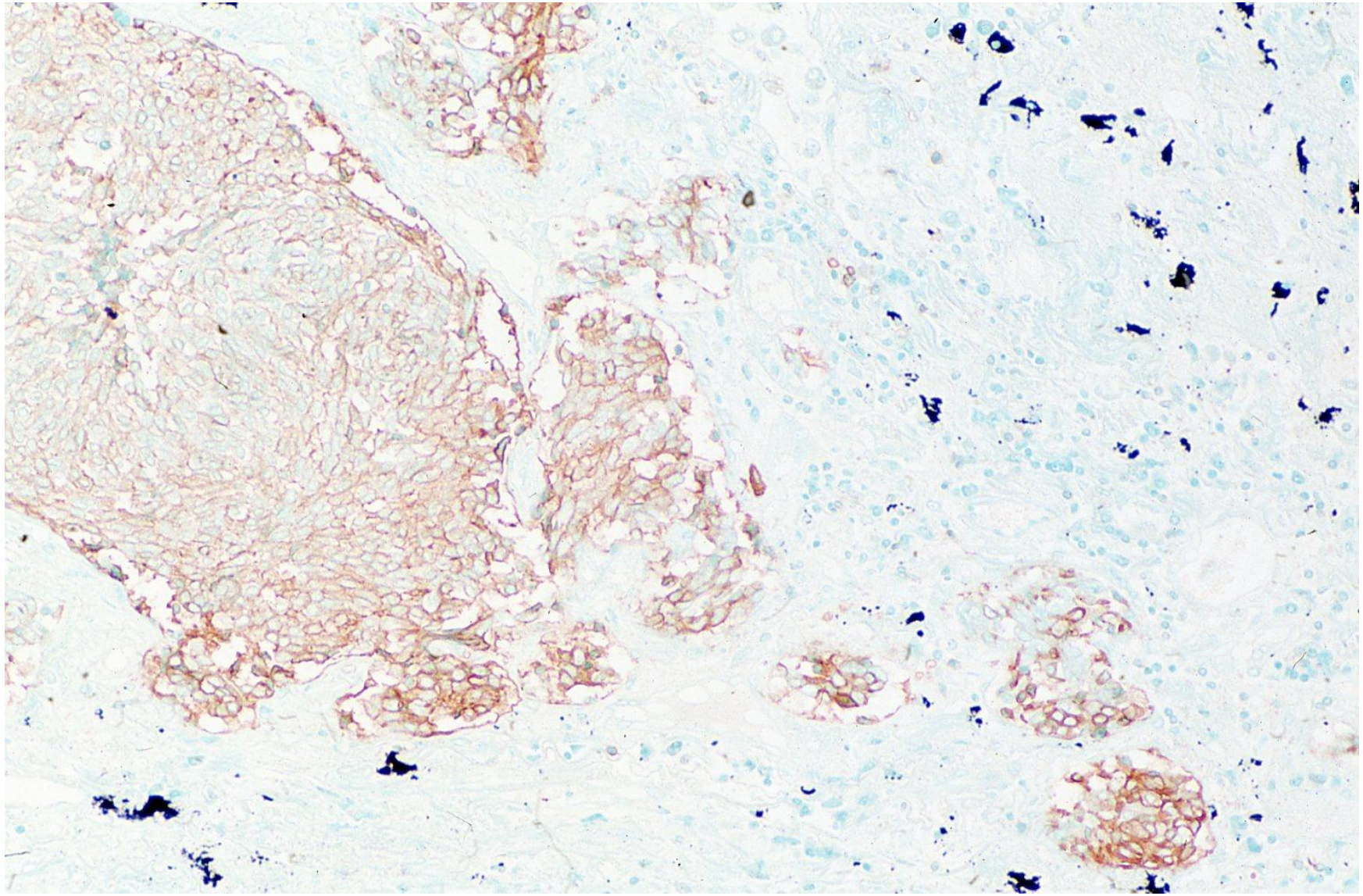
Leu 7 (CD57) in normal adult skin. Some of the peripheral nerve fibers are immunoreactive for Leu 7 (CD57).



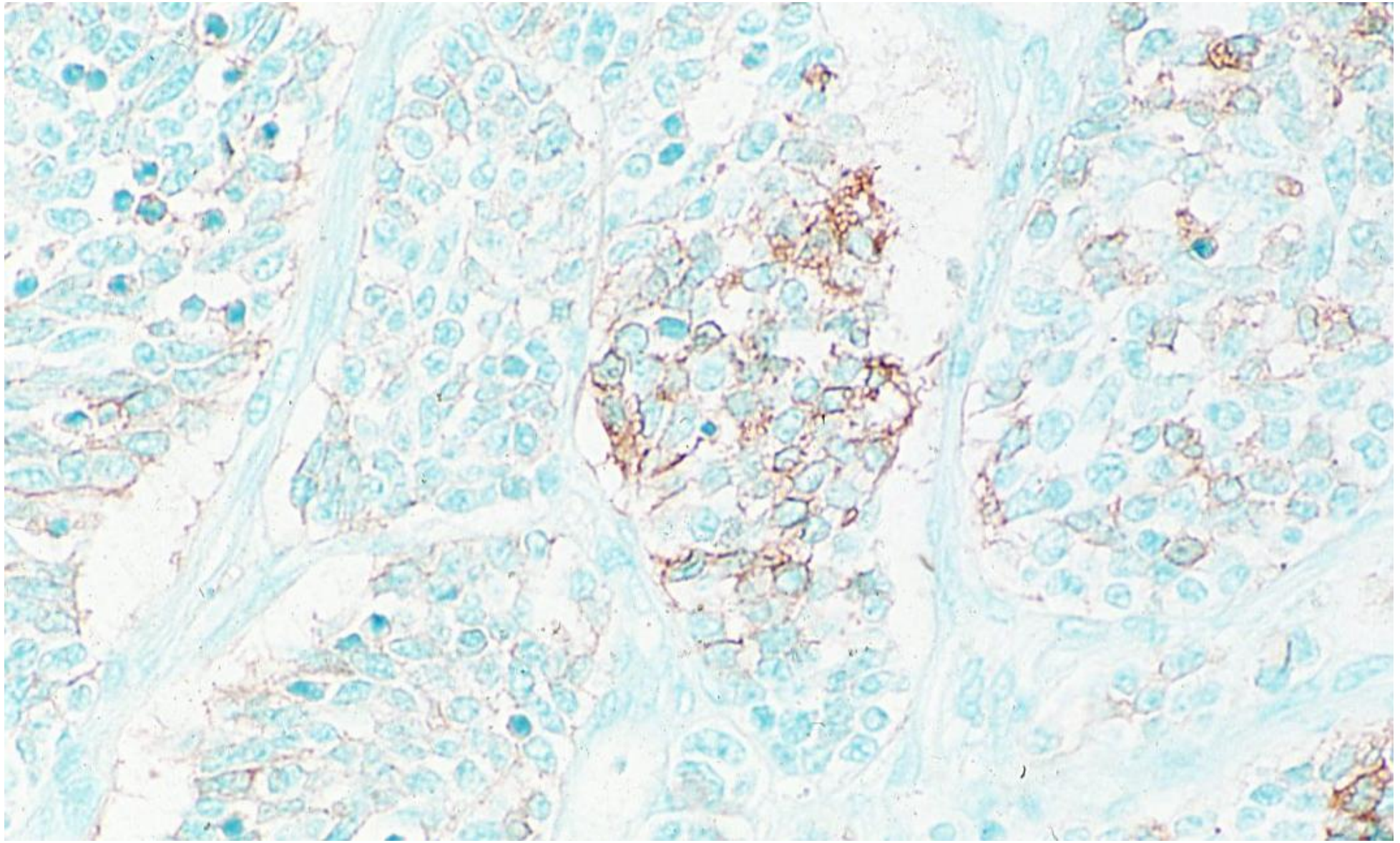
Rectal carcinoid tumor expressing Leu 7 (CD57) immunoreactivity.
Granular cytoplasmic positivity is seen in most neuroendocrine tumor cells.



Islet cell tumor of the pancreas expressing Leu 7 (CD57) immunoreactivity. Granular cytoplasmic positivity is seen in some neuroendocrine tumor cells.



Pulmonary tumorlet expressing Leu 7 (CD57) immunoreactivity. Hyperplastic neuroendocrine cells in the anthracotic and fibrotic lung are diffusely immunoreactive for Leu 7 (CD57).



Small cell lung carcinoma expressing Leu 7 (CD57) immunoreactivity. Some of the small-sized neuroendocrine cancer cells are focally immunoreactive for Leu 7 (CD57).

Leu 7 antigen in neuroendocrine tumors

	+++	++	+	-	positive
Pheochromocytoma	1	1	0	2	2/4
Neuroblastoma	0	1	1	2	2/4
Esthesioneuroblastoma	0	0	0	1	0/1
Islet cell tumor	1	2	0	2	3/5
Carcinoid tumor, gastrointestinal	5	2	5	4	12/16
Carcinoid tumor. Thymus	1	0	0	0	1/1
Pulmonary tumorlet	9	0	0	0	9/9
Bronchial carcinoid	0	5	1	0	6/6
Small cell lung carcinoma	0	3	7	8	10/18
Medullary thyroid carcinoma	0	1	0	0	1/1
Non-pulmonary small cell carcinoma	0	0	3	1	3/4
Total	17	15	17	20	49/69

(+++: >50%, ++: positive cells scattered, +: a few positive cells, -: negative)