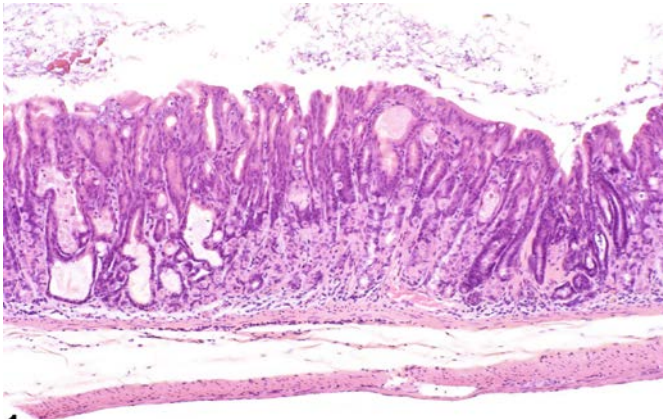
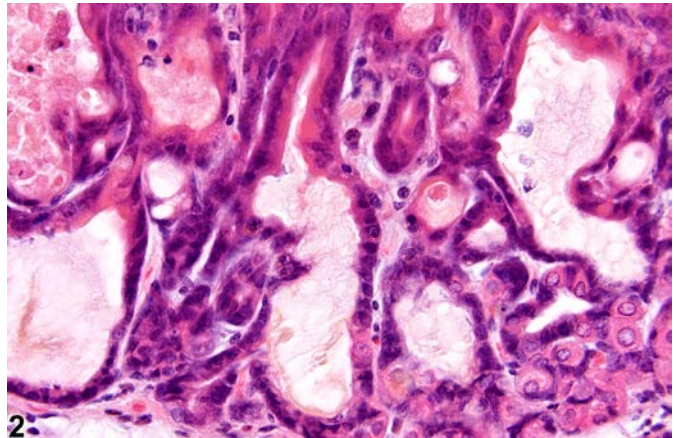


NTP Nonneoplastic Lesion Atlas

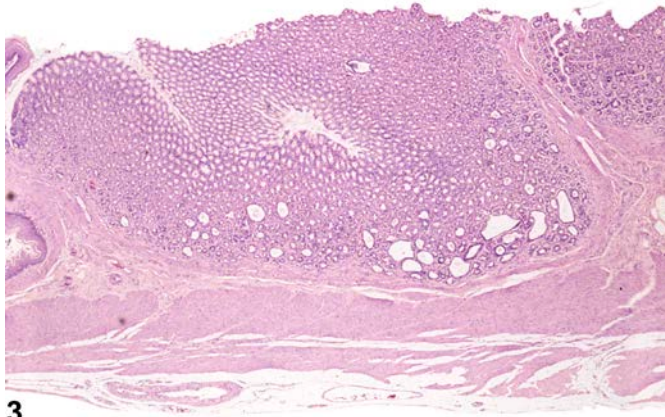
Stomach, Glandular Stomach, Glands – Dilation



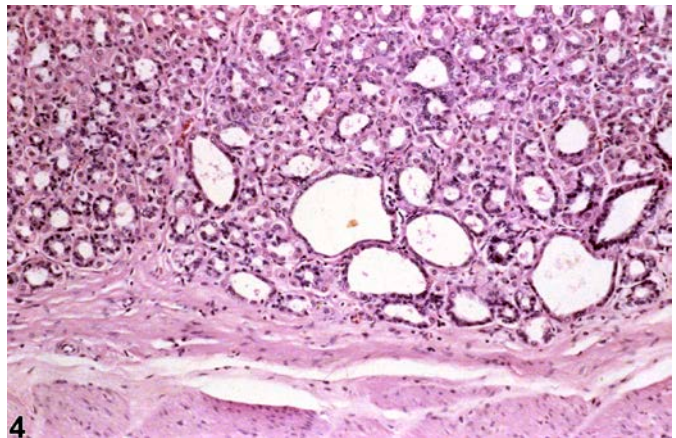
1



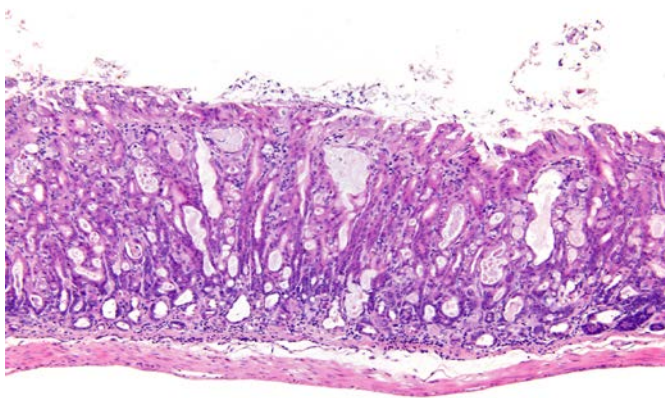
2



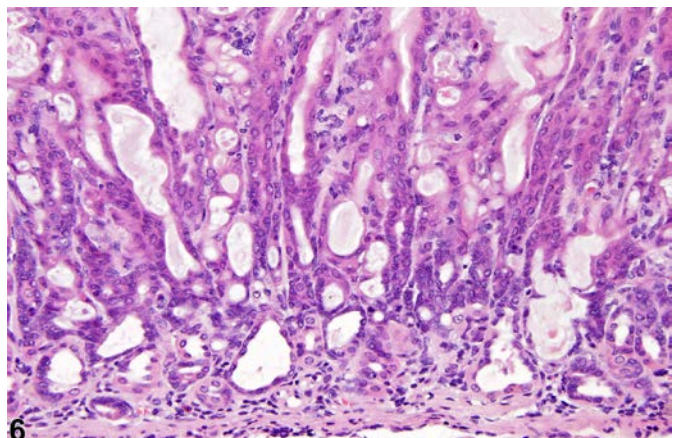
3



4



5



6



NTP Nonneoplastic Lesion Atlas

Stomach, Glandular Stomach, Glands – Dilation

Figure Legend: **Figure 1** Stomach, Glandular stomach, Glands - Dilation in a male B6C3F1 mouse from a chronic study. Glandular dilation predominantly at the base of the glands. **Figure 2** Stomach, Glandular stomach, Glands - Dilation in a male B6C3F1 mouse from a chronic study (higher magnification of Figure 1). Multiple glands are affected, and gland profiles are irregular. **Figure 3** Stomach, Glandular stomach, Glands - Dilation in a female F344/N rat from a chronic study. Glandular dilation is present predominantly at the base of the glands. **Figure 4** Stomach, Glandular stomach, Glands - Dilation in a female F344/N rat from a chronic study (higher magnification of Figure 3). Multiple glands are affected. **Figure 5** Stomach, Glandular stomach, Glands - Dilation in a male B6C3F1 mouse from a chronic study. Glandular dilation is present predominantly at the base of the glands. **Figure 6** Stomach, Glandular stomach, Glands - Dilation in a male B6C3F1 mouse from a chronic study (higher magnification of Figure 5). Multiple glands are affected.

Comment: Dilated glands usually involve the basal to midportion of the gastric glands, which may become distended with clear fluid, secretion, or cellular debris (Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, and Figure 6). This usually occurs as a focal or multifocal event and may be seen as an aging change in rats. Glandular dilation usually involves multiple glands, and the dilatation is often irregular in profile (i.e., not a well-circumscribed circular structure). Glandular cysts (see Stomach, Glandular stomach, Glands - Cyst) are usually solitary, larger, and lined by attenuated epithelium.

Recommendation: Whenever present, glandular dilation should be diagnosed and graded; grading is based on the number and size of dilated glands and total area of mucosa affected.

References:

Bertram TA, Markovits JE, Juliana MM. 1996. Non-proliferative lesions of the alimentary canal in rats GI-1. In Guides for Toxicologic Pathology. STP/ARP/AFIP, Washington, DC, 1-16.

Full-text: <https://www.toxpath.org/ssdnc/GINonproliferativeRat.pdf>

Brown HR, Hardisty JF. 1990. Oral cavity, esophagus and stomach. In: Pathology of the Fischer Rat (Boorman GA, Montgomery CA, MacKenzie WF, eds). Academic Press, San Diego, CA, 9-30.

Abstract: <http://www.ncbi.nlm.nih.gov/nlmcatalog/9002563>

Frantz JD, Betton GR, Cartwright ME, Crissman JW, Macklin AW, Maronpot RR. 1991. Proliferative lesions of the non-glandular and glandular stomach in rats GI-3. In Guides for Toxicologic Pathology. STP/ARP/AFIP, Washington, DC, 1-20.

Full-text: <https://www.toxpath.org/ssdnc/StomachProliferativeRat.pdf>



NTP Nonneoplastic Lesion Atlas

Stomach, Glandular Stomach, Glands – Dilation

References:

National Toxicology Program. 1988. NTP TR-336. Toxicology and Carcinogenesis Studies of Penicillin VK (CAS No. 132-98-9) in F344/N Rats and B6C3F1 Mice (Gavage Studies). NTP, Research Triangle Park, NC.

Abstract: <http://ntp.niehs.nih.gov/go/8907>

National Toxicology Program. 2000. NTP TR-491. Toxicology and Carcinogenesis Studies of Methyleugenol (CAS No. 93-15-2) in F344/N Rats and B6C3F1 Mice (Gavage Studies). NTP, Research Triangle Park, NC.

Abstract: <http://ntp.niehs.nih.gov/go/10172>

National Toxicology Program. 2010. NTP TR-558. Toxicology and Carcinogenesis Studies of 3,3',4,4'-Tetrachloroazobenzene (TCAB) (CAS No. 14047-09-7) in Harlan Sprague-Dawley Rats and B6C3F1 Mice (Gavage Studies). NTP, Research Triangle Park, NC.

Abstract: <http://ntp.niehs.nih.gov/go/33564>

Authors:

Linda H. Kooistra, DVM, PhD, DACVP
Pathologist
Charles River Laboratories, Inc.
Research Triangle Park, NC

Abraham Nyska, DVM, Diplomate ECVF, Fellow IATP
Expert in Toxicologic Pathology
Visiting Full Professor of Pathology
Sackler School of Medicine, Tel Aviv University
Timrat Israel