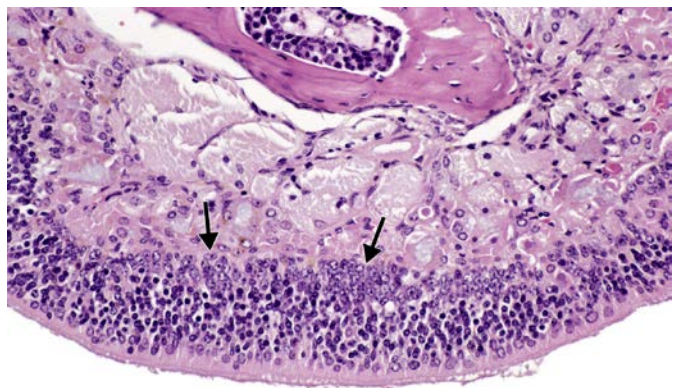
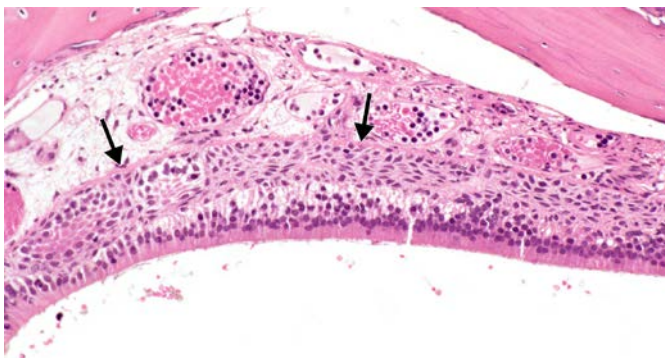
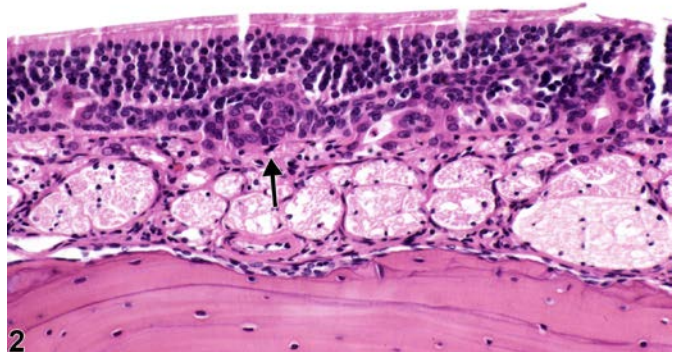
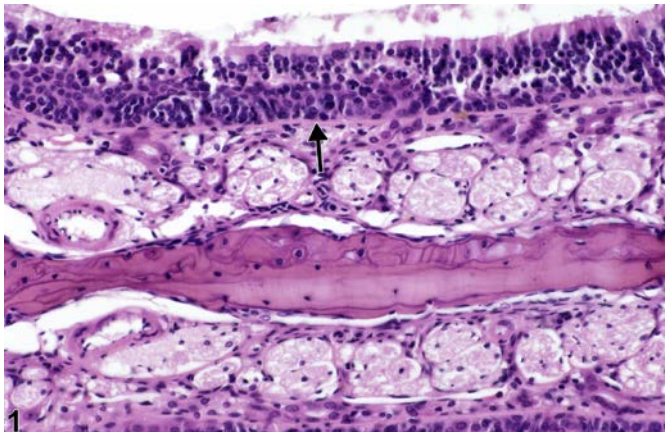


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Nose, Olfactory Epithelium – Hyperplasia, Basal Cell

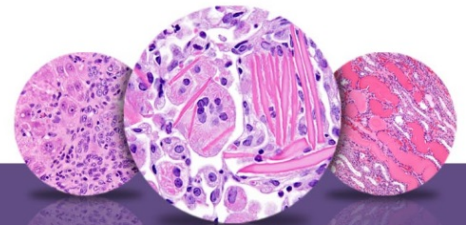


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Figure Legend: **Figure 1** Nose, Olfactory epithelium - Hyperplasia, Basal cell in a male F344/N rat from a subchronic study. Proliferation of basal cells is present just above the basement membrane of the olfactory mucosa (arrow). **Figure 2** Nose, Olfactory epithelium - Hyperplasia, Basal cell in a male F344/N rat from a subchronic study. A focal area of proliferation of basal epithelial cells (arrow) is present in the olfactory mucosa. **Figure 3** Nose, Olfactory epithelium - Hyperplasia, Basal cell in a female F344/N rat from a chronic study. A continuous band of proliferative basal epithelial cells (arrows) is present above the basement membrane of the olfactory mucosa. **Figure 4** Nose, Olfactory epithelium - Hyperplasia, Basal cell in a male B6C3F1/N mouse from a chronic study. A localized aggregate of proliferative basal cells (arrows) is present in the olfactory mucosa.

Comment: Basal cell hyperplasia of the olfactory epithelium is characterized by a proliferation of basal cells along the basement membrane of the olfactory epithelium. The proliferating cells form a distinctly



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identifiable layer above the basement membrane. The cells are bounded by the basement membrane and do not extend into the subjacent lamina propria (which is a feature of atypical olfactory epithelial hyperplasia - see Nose, Epithelium - Hyperplasia, Atypical). Usually, there are concurrent olfactory epithelial changes, such as degeneration or respiratory metaplasia.

Recommendation: Basal cell hyperplasia of the nasal olfactory epithelium should be diagnosed and given a severity grade when the proliferating basal cells do not extend beyond the basement membrane into the lamina propria. If the basal cells extend beyond the basement membrane, atypical hyperplasia should be diagnosed (see Nose, Epithelium - Hyperplasia, Atypical). Associated lesions, such as inflammation or degeneration, should be diagnosed separately.

References:

Hardisty JF, Garman RH, Harkema JR, Lomax LG, Morgan KT. 199. Histopathology of nasal olfactory mucosa from selected inhalation toxicity studies conducted with volatile chemicals. *Toxicol Pathol* 27:618-627.

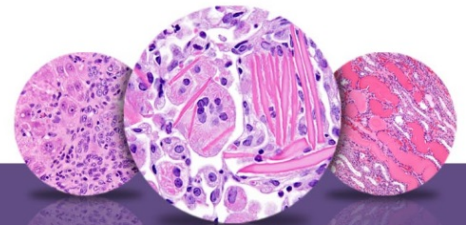
Abstract: <http://www.ncbi.nlm.nih.gov/pubmed/10588541>

National Toxicology Program. 2002. NTP TR-504. Toxicology and Carcinogenesis Studies of o-Nitrotoluene (CAS No. 88-72-2) in F344/N Rats and B6C3F1 Mice (Feed Studies). NTP, Research Triangle Park, NC.

Abstract: <http://ntp.niehs.nih.gov/go/14886>

National Toxicology Program. 2006. NTP TR-534. Toxicology and Carcinogenesis Studies of Divinylbenzene-HP (CAS No. 1321-74-0) in F344/N Rats and B6C3F1 Mice (Inhalation Studies). NTP, Research Triangle Park, NC.

Abstract: <http://ntp.niehs.nih.gov/go/17633>



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