

water soluble vitamine promptly recover when either the almond, English walnut or filbert is introduced in the diet.

Investigations in this field are being continued.

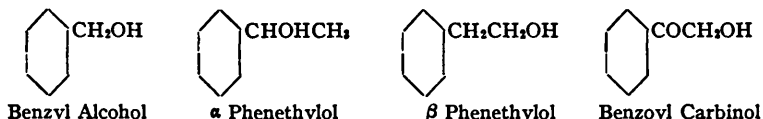
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The local anesthetic properties of benzoyl carbinol.

By AXEL M. HJORT and CHARLES E. KAUFMANN (by invitation).

[From the Department of Pharmacology, Yale University School of Medicine.]¹

Since Macht² observed that benzyl alcohol possessed local anesthetic powers, several of its homologues have been studied for like properties in this laboratory. These consist of α^3 and β^4 phenethylol and benzoyl carbinol. The structural relationship of these substances is:



Hirschfelder⁵ recently reported his observations on a series of compounds closely related to the above. β phenethylol and phenyl glycol were amongst these, the latter being the reduction product of benzoyl carbinol, the subject of this paper.

The relative efficiency of the substances investigated, with respect to their local anesthetic properties, is shown by the following table:

¹ This research has been supported by a grant from the Committee on Scientific Research of the American Medical Association.

² Macht, D. I., *Journ. Pharm. & Exp. Therap.*, 1918, xi, 263.

³ Hjort, A. M., and Kaufmann, C. E., *Ibid.* In press.

⁴ Hjort, A. M., and Eagan, J. T., *Ibid.*, 1919, xiv, 211.

⁵ Proc. Soc. Pharm. & Exp. Therap. (Dec., 1919), *J. Pharm. & Exp. Therap.*, 1920.

Substance.	Minimal Lethal Dose per 20-30 G. White Mice Mgms.	Quantity Non-lethal Intravenously in Dogs. Gms. per Kilo.	Minimal Effective Anesthetic Concentration on Rabbits' Cornea, %.	Minimal Effective Anesthetic Concentration in Human Skin, %.
Benzyl Alcohol	50 ¹	0.2 ¹	1.25 ³	1/30 ²
α Phenethylol	20 ²	0.1 ²	0.75 ²	1/40 ²
β Phenethylol	40 ³	0.2 ³	1.00 ³	1/40 ^{3,4}
Benzoyl Carbinol	40 ²	0.2 ²	0.50 ²	1/40 ²

¹ Macht.

² Hjort and Kaufmann.

³ Hjort and Eagan.

⁴ (1/40) 13 wheals in 21.

Sollmann⁶ found that procaine in the strength of 1/32 per cent. was the minimal concentration which anesthetized human skin when injected intradermally and tested according to the wheal method of Hoffmann.⁷ From the above table, therefore, it is seen that benzoyl carbinol is at least as efficient on the human skin as any known anesthetic.

Benzoyl carbinol is not as irritant on the tongue as the benzyl alcohol and its above mentioned homologues. In the skin, likewise, it does not induce as extensive a local reaction of the tissues. It is soluble in water to the extent of about one half per cent. at 20° C., but when heated to 50° C. a one per cent. solution can be made which does not alter within two hours. Benzoyl carbinol is, therefore, soluble within practical limits.

Summary.—1. Benzoyl carbinol possesses local anesthetic properties which in general are superior to those of its homologues herein discussed.

2. Benzoyl carbinol is less irritant to the body tissues than its congeners.

3. Its solubility in water is sufficient to make it a practicable local anesthetic.

4. It is the most stable of the series.

⁶ Sollmann, T., *Ibid.*, 1918, xi, 69.

⁷ Hoffmann, u. Kochmann, *Beit. Klin. Chir.*, 1914, xci, 489.