

**ADRENALIN: ITS  
PROPERTIES, PHYSIOLOGIC  
ACTION, MODE OF USE,  
AND THERAPEUTIC HISTORY**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649455041

Adrenalin: Its Properties, Physiologic Action, Mode of Use, and Therapeutic History by  
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# ADRENALIN

Its Properties, Physiologic Action, Mode of  
Use, and Therapeutic History

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CONDENSED CLINICAL REPORTS  
SHOWING ITS WIDE RANGE OF  
APPLICABILITY . . . . .

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PARKE, DAVIS & COMPANY

1913

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General considerations on Adrenalin, which will interest all investigators, occupy the first 23 pages of this work; the arrangement is developmental, not alphabetical. From page 24 to page 117, various pathological conditions in which Adrenalin has been successfully employed are arranged under appropriate headings in alphabetical order. This arrangement, while not subdivided quite so minutely as the clinical data would permit, will, it is believed, answer all practical purposes without the addition of a detailed index. The same may also be said of the contents of pages 118-121, "Adrenalin in Diagnosis," and pages 122-133, "Adrenalin with Cocaine or Eucaine." These general divisions must be kept in mind; for while some of the reports might have been classified under more than one heading, not one is repeated. The running titles at the top of the page are for the purpose of enabling the reader to see at a glance just what the underlying paragraphs refer to, the introductory heading being on a preceding page.

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FOR A LIST OF THE VARIOUS  
FORMS AND COMBINATIONS IN  
WHICH ADRENALIN IS MAR-  
KETED SEE PAGES 6 TO 9.

# ADRENALIN.



## PROPERTIES.

*Adrenalin* is the name given by Dr. Jokichi Takamine to the astringent, blood-pressure raising principle of the adrenals, or suprarenal glands, as first isolated by him. It is a grayish-white microcrystalline powder. It is slightly alkaline in reaction, and in the dry form quite stable; on heating, however, to 205° C. it turns brown, and at 207° C. melts and decomposes.

Adrenalin is insoluble in alcohol or ether; sparingly soluble in cold, more soluble in hot water. It dissolves readily in dilute acids or fixed alkali hydroxides.

Adrenalin has a slightly bitter taste and a temporarily numbing effect upon the tongue.

## SOLUTIONS.

Solutions of Adrenalin for practical use are best made by the agency of the chloride; that is to say, Adrenalin Chloride is first formed by union of the crystals with hydrochloric acid, and then a "normal" solution of sodium chloride in water is added *in vacuo*. On prolonged exposure to the air, the aqueous solution is oxidized, becoming pink, then red, and eventually brown. When the last change in color occurs, the Adrenalin has lost its characteristic physiologic properties. In the vial, protected from air and light, the solution remains practically unchanged for many months.

We market *Adrenalin* in vials containing one grain of the crystals; this form of the drug is not, however, in much demand for therapeutic purposes. The preparation usually employed is *Adrenalin Chloride Solution*, 1:1000, containing one part of Adrenalin Chloride in 1000 parts of physiologic or "normal" salt solution, with 0.5 per cent. chlore-tone.



Adrenalin Chloride Solution may be sterilized by boiling, but only small quantities should be thus treated, and not the stock solution.

### Adrenalin Preparations.

Separate literature on our various Adrenalin preparations can be had on application. The list at present is as follows:

**Adrenalin Crystals**, in 1-grain vials.

**Adrenalin Chloride Solution, 1:1000**, in 1-ounce glass-stoppered bottles.

**Adrenalin Chloride Solution, Dilute, R 1 (1:10,000)**, in glaseptic ampoules containing 1 Cc. (16 minims), in boxes of 12.

**Adrenalin Chloride Solution, R 2 (1:3200)**, in glaseptic ampoules containing 1 Cc. (16 minims), in boxes of 12.

**Adrenalin Inhalant**, in 1-ounce glass-stoppered bottles. One part of Adrenalin chloride in 1000 parts of an aromatized neutral oil base, with 3% chloretone.

**Adrenalin Ointment 1:1000**, in ½-ounce collapsible tubes with elongated nozzle.

**Adrenalin and Chloretone Ointment**, in ½-ounce collapsible tubes with elongated nozzle. Each ounce contains: Chloretone, 20 grs. (5%); Adrenalin chloride, 2-5 gr. (1:1000).

**Adrenalin Suppositories**, in boxes of 12. Each suppository contains 1 part of Adrenalin chloride combined with 1000 parts of Oil Theobroma base.

**Adrenalin and Chloretone Suppositories**, in boxes of 12. Each suppository contains: Adrenalin, 3/200 grain (1:1000); Chloretone, 3 grains.

**Adrenalin Compound Suppositories**, in boxes of 12. Each suppository contains: Adrenalin, 1/300 grain (1:6000); Cocaine, ½ grain (about 3%); Formidine, 1 grain; Ext. Hamamelis, 1 grain. Base, cacao butter.

**Adrenalin Tablets**, in vials of 25. Each tablet contains  $\frac{3}{200}$  grain of Adrenalin. Dissolved in 15 minims of water, a 1:1000 Adrenalin solution results.

**Adrenalin Tablets No. 2**, in vials of 25. Each tablet contains  $\frac{1}{200}$  grain of Adrenalin. Dissolved in 5 minims of water, a 1:1000 Adrenalin solution results.

**Adrenalin and Cocaine Tablets** (H. T. 151), in tubes of 25. Of narrow cylindrical shape. Each tablet contains: Adrenalin,  $\frac{1}{300}$  grain; Cocaine hydrochloride (pure crystals),  $\frac{1}{6}$  grain. One tablet dissolved in 15 minims of water makes approximately a 1% solution of Cocaine in Adrenalin 1:4500.

**Adrenalin and Cocaine Tablets, R "B"** (H. T. 178), in tubes of 25. Of narrow cylindrical shape. Each tablet contains: Adrenalin,  $\frac{1}{300}$  grain; Cocaine hydrochloride (pure crystals),  $\frac{1}{12}$  grain. One tablet dissolved in 15 minims of water makes approximately a 0.5% solution of Cocaine in Adrenalin 1:4500.

**Adrenalin and Cocaine Tablets, R "C"** (H. T. 181), in tubes of 15 and bottles of 100. Each tablet contains: Adrenalin, 0.00016 Gm. ( $\frac{1}{400}$  grain); Cocaine hydrochloride, 0.05 Gm. ( $\frac{1}{20}$  grain). A 2% solution of Cocaine in Adrenalin 1:16,000 may be made by dissolving one tablet in 40 minims of water.

**Adrenalin and Cocaine Tablets, R "D"** (H. T. 203), in vials of 25. Of narrow cylindrical shape. Each tablet contains: Adrenalin,  $\frac{1}{600}$  grain; Cocaine hydrochloride (pure crystals),  $\frac{1}{6}$  grain. One tablet dissolved in 15 minims of water makes approximately a 1% solution of Cocaine in Adrenalin 1:9000.

**Adrenalin and Eucaine Tablets, R "B"** (H. T. 194), in vials of 25. Of narrow cylindrical shape. Each tablet contains: Adrenalin,  $\frac{1}{400}$  grain; Eucaine hydrochloride, "B,"  $\frac{1}{7}$  grain. One tablet dissolved in 15 minims of water makes approximately a 1% solution of Eucaine in Adrenalin 1:6000.

**Adrenalin and Novocaine Tablets** (H. T. 187), in vials of 25. Each tablet contains: Adrenalin,  $\frac{1}{200}$

grain; Novocaine, 1/3 grain. One tablet dissolved in 15 minims of water makes approximately a 2% solution of Novocaine in Adrenalin 1:3000.

**Adrenalin and Novocaine Tablets, R "B"** (H. T. 188), in vials of 25. Of narrow cylindrical shape. Each tablet contains: Adrenalin, 1/400 grain; Novocaine, 1/6 grain. One tablet dissolved in 15 minims of water makes approximately a 1% solution of Novocaine in Adrenalin 1:6000.

**Adrenalin and Novocaine Tablets, R "C"** (H. T. 202), in vials of 10. Each tablet contains: Adrenalin, 1/200 grain; Novocaine, 4 grains. One tablet dissolved in 5 Cc. (80 minims) of water makes approximately a 5% solution of Novocaine in Adrenalin 1:15,000.

**Adrenalin Tape, Sterilized**, in glass jars. A soft imported mull, double-selvaged, and impregnated with a 1:2000 solution of Adrenalin chloride. One-half inch width in 10-yard strips; 1½-inch width in 5-yard strips.

**Anesthone Cream** (formula of Dr. J. E. Alberts), in collapsible tubes with elongated nozzle. Contains 10% of para-amido-ethyl-benzoate, in Adrenalin chloride 1:20,000. For local application in the symptomatic treatment of hay fever, rose-cold, etc.

**Anesthone Inhalant**, in 1-ounce glass-stoppered bottles. Each fluidounce contains: Alcohol, 15%; Adrenalin chloride, 1:10,000; Para-amido-ethyl-benzoate, 10%; in an aromatized neutral oil base. Used for the same purposes as Anesthone Cream.

**Anesthone Tape**, a soft imported mull, ½ inch wide, double-selvaged, treated with a 5% soluble salt of para-amido-ethyl-benzoate in Adrenalin chloride 1:20,000. In glass vials containing 2½ yards. For insertion in the nares in hay fever, etc.

**Codrenin, R "A,"** in 1-ounce glass-stoppered bottles. Each fluidounce contains: Cocaine hydrochloride, 9¼ grains; Adrenalin chloride, 1/36 grain; Chloretone, 2¼ grains. A 2% solution of Cocaine in Adrenalin 1:15,000.