178 (2410)

The determination of the pH of the urine with 4 nitro 6 aminoguaiacol.

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Since the "total acidity" of the urine has no chemical meaning it is often desirable to know the hydrogen ion concentration. At the suggeestion of Dr. J. B. Sumner, a sample of 4 nitro 6 aminoguaiacol which he kindly furnished, was used for this purpose. This appears to be a polybasic acid, which from pH 0 to 4 gives an increasing (yet always pale) yellow color, and from pH 4.5 to 8.5 gives an increasing henna color. The method is as follows:

In the left-hand cup of a Duboscq colorimeter place 0.5 cc. of an 0.1 per cent indicator, and 10 cc. of urine. In the right-hand cup place 0.5 cc. indicator, and 10 cc. 0.1 N NaOH solution. Adjust the left-hand cup to 20 mm., and hold under the right-hand cup a glass dish containing urine 20 mm. deep. Determine the percentage dissociation (percentage color) in the left-hand cup. In highly acid urines a color match cannot be obtained in this way. It is then necessary to place over the eye piece a glass dish with some of the indicator in 0.01 N HCl. The following table gives the approximate pH at different percentage dissociation:

pH	4.6	4.7	4.8	4.9	5	5.1	5.2	5.3	5.4	5.5
Per cent dissociation	3.0	3.5	4.0	4.5	5.5	6.5	8.0	9.0	11.0	13.0
pH			5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3
Per cent dissociation			15.0	17.0	19.0	22.0	25.0	29.0	33.0	37.0
pH			6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1
Per cent dissociation			42.0	46	50	54	58	62	66	70
pH		7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0
Per cent dissociation		74	77	80	83	85	87	89	91	92