

**The Role of Histamine in Leucocytosis**

Leucocytosis due to bone-marrow activity is a known fact. This kind of real leucocytosis can be produced by intraperitoneal injection of various oils (turpentine, croton oil, etc.).

Effect of antihistamine on leucocytosis caused by turpentine

Group	Drug admin.	No.	Bas. leuco-cyte counts	Alter. leuc. counts	Effect
I	Histamine	1.	9,600	2,0500	Increased
		2.	9,500	4,9000	
		3.	4,000	1,9500	
		4.	5,000	41,000	
		5.	5,700	19,400	
		6.	7,000	27,300	
		7.	4,000	19,500	
		8.	5,000	41,000	
II	Rp. 3277	1.	15,000	16,000	Unchanged
		2.	19,000	19,000	
		3.	9,500	10,000	
		4.	9,800	10,200	
		6.	7,600	7,000	
		7.	19,000	16,000	
		8.	13,000	11,000	
		III	Turpentine	1.	
2.	9,500			18,500	
6.	5,900			31,000	
10.	8,800			20,000	
12.	12,500			20,000	
13.	7,000			25,000	
15.	6,500			23,000	
IV	RP. 3277 and Turpentine			1.	9,200
		2.	14,000	13,500	
		9.	11,000	11,000	
		15.	7,000	8,000	
		23.	7,000	7,500	Greatly Unchanged
		24.	9,000	8,800	
		25.	9,900	8,500	
		26.	7,600	7,900	
		27.	4,900	5,300	
		28.	5,400	6,000	
		16.	21,000	25,000	
		18.	9,500	11,500	
		20.	12,500	16,000	
		22.	12,500	15,500	
29.	8,000	9,000			
30.	6,700	7,300			

which show that turpentine, benzol, X-ray, etc. do not produce leucocytosis in mice accustomed to histamine.

To find a uniform interpretation for the mechanism of leucocytosis I supposed, that histamine plays an important role in these cases<sup>1</sup>.

It is possible to prove this part played by histamine by the administration of antihistamine drugs<sup>2</sup>.

In all of my experiments I used the drug RP. 3277.

**Methods:**

Experiments were made on 61 mice; they were starved 12 hours before we used them. After determining the basal leucocyte counts<sup>3</sup> I divide the animals into 4 groups.

Group I: 8 mice were given 0.25-0.4 mg histamine pro 10 g body-weight.

Group II: 8 mice were given 1.2 mg RP. 3277 pro 10 g body-weight.

Group III: 15 mice were given 0.4 ml turpentine intraperitoneally.

Group IV: 30 mice were given 1.2 mg RP. 3277 pro 10 g body-weight and 20 minutes later 0.4 ml turpentine.

White-blood-cell counts were determined repeatedly during a period of 5 hours.

To guard the animals against heat loss caused by antihistaminic, they were kept during the experiment in a thermostat at 30°.

It was found that the percentage of neutrophile leukocytes was increased by the administration of turpentine oil from 25-30 to 70-75 in the average.

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*Zusammenfassung*

1. Eine Einzeldosis von 1,2 mg Rp. 3277 pro 10 g Körpergewicht konnte die Leukozytosewirkung von Terpentin, das 20 Minuten später in die Peritonealhöhle eingespritzt wurde, mehr oder weniger vollständig aufheben. Bei 30 Versuchsmäusen gab es in 19 Fällen einen totalen und in 11 einen teilweisen Effekt.

2. Rp. 3277 ist ein spezifisches Antihistaminikum. Nach den vorliegenden Versuchen scheint das Freiwerden von Histamin bei der durch Terpentin hervorgerufenen Leukozytose eine erhebliche Rolle zu spielen.

<sup>1</sup> M. UHARA, J. med. Coll. Keijo. Jap. 11, 108 (1941). - Ref.: Ber. ges. Physiol. 127, 195 (1942).

<sup>2</sup> B. N. HALPERN, J. Allergy 18, 263 (1947).

<sup>3</sup> S. DUVOLON, Le Sang 18, 205 (1947).

Some authors attribute importance to histamine in the process resulting in the above-mentioned experimental leucocytosis<sup>1</sup>. It is well known, that histamine injected to rabbits, horses<sup>2</sup> or men<sup>3</sup> produces leucocytosis in a short while.

The presence and importance of histamine is demonstrated by the experiments of LICHTNECKERT<sup>4</sup>

<sup>1</sup> V. H. MOON, M. MARSHALL, M. M. LIEBER, and P. J. KENNEDY: Arch. Path. 20, 209 (1935). - O. BIER and M. ROCHA E SILVA, C. r. Soc. Biol. 129, 769, 773 (1938).

<sup>2</sup> E. AKERBLUM and K. SJÖBERG, Naunyn-Schmiedeberg's Arch. 186, 53 (1938).

<sup>3</sup> H. HORTLING, Acta med. Scand. Suppl. CCI. 1948.

<sup>4</sup> S. LICHTNECKERT, Personal communication.

**Über komplementäre Spektren**

Kürzlich verwies H. PODESTÀ<sup>1</sup> auf das sog. umgekehrte Spektrum, das in seinem Ursprung auf GOETHE<sup>2</sup> zurückgeht und vor mehr als 30 Jahren von A. KIRSCHMANN<sup>3</sup> eingehender beschrieben wurde. Da es nicht nur dem Physiker ein altbekanntes Phänomen in neuem, überraschendem Aspekt zeigt, sondern auch dem Farb-

<sup>1</sup> H. PODESTÀ, Die Naturwissenschaften 36, 339 (1949).

<sup>2</sup> W. v. GOETHE, Beiträge zur Optik (1791); Zur Farbenlehre (1810).

<sup>3</sup> A. KIRSCHMANN, Physikal. Z. 18, 195 (1917); Abderhaldens Hdb. biolog. Arbeitsmethoden Abt. II, Teil A, 116 (1927).