Means of plasma corticosteroid levels after 0.1 mg, 0.3 mg and 1 mg

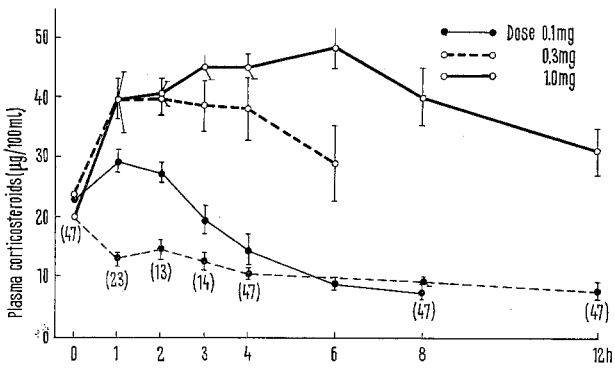
	0	1	2	3	4	6	8	12 h
0.1 mg mean	23.2 (6)[a]	29.6 (6)	27.6 (6)	19.9 (6)	14.7 (6)	9.1 (6)	7.7 (6)	–
S.E.M.	±1.0	±1.7	±1.6	±2.3	±2.5	±1.0	±1.2	–
0.3 mg mean	23.8 (5)	39.7 (5)	40.4 (5)	38.9 (5)	38.2 (5)	29.2 (5)	–	–
S.E.M.	±0.9	±3.4	±3.0	±4.2	±5.2	±6.2	–	–
1 mg mean	20.4 (12)	39.1 (12)	40.7 (12)	45.3 (12)	45.1 (12)	48.8 (6)	40.3 (6)	31.2 (5)
S.E.M.	±2.3	±4.9	±1.8	±2.5	±2.3	±3.7	±4.8	±3.7

[a] (In brackets the number of subjects for each mean value.)

plasma corticosteroids at all the dose levels tested, i.e. 0.1 mg, 0.3 mg and 1.0 mg.

Discussion. In the light of these observations it may be concluded that preparation CIBA 41,795-Ba is fully effective when administered by the nasal route. The dose-response relation is satisfactory.

The duration of action appears to be dose-dependent: the corticotropic effect was still detectable 12 h after the administration of 1 mg of the product, whereas it had already begun to diminish after 4 h following a dose of 0.1 mg.



Curves of plasma corticosteroid levels after the various doses tested. The dotted line represents the diurnal rhythm of normal non-treated subjects (in brackets the number of subjects for each mean value).

This study shows that, despite the individual differences in response normally attendant upon the use of nasal sprays, the corticotropic action of the peptide administered in this way is remarkably consistent. At any given dose the statistical scatter is small.

The administration of a polypeptide with corticotropic activity by the nasal route would thus appear to offer a means of circumventing the difficulties associated with repeated administration by injection[8].

Résumé. L'administration en nébulisation nasale d'un peptide synthétique corticotrope: [D-Sér[1], Lys[17,18]]-β-corticotrophine-(1-18)-octadécapeptide$_o$amide (CIBA 41,795-Ba), s'est montrée parfaitement efficace et a élevé le taux des corticoïdes plasmatiques chez des volontaires normaux. La relation dose-réponse s'est montrée très satisfaisante.

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Cytochemical Studies on Histone Moiety of an Asynaptic Mutant of *Phaseolus mungo*

On the basis of cytophotometric studies, ANSLEY[1,2] reported that, compared with the normal meiotic cells, the asynaptic cells in *Loxa* and *Scutigera* produce an increased amount of histone. The availability of an asynaptic mutant of *Phaseolus mungo* prompted the present investigation on the histones of normal and asynaptic plants.

Materials and methods. The root tips and the microsporocytes of the normal and the mutant plants were stained with alkaline fast green after TCA hydrolysis[3] and bromphenol blue and eosin Y after picric acid hydrolysis[4]. Acetylation and deamination of histones were also carried out prior to staining to determine whether the histones are rich in arginine or lysine[4]. The degree of stainability was assessed by visual rating of coded slides by 2 different individuals.

Results and discussion. When the root tip cells of the normal and asynaptic plants are stained with alkaline fast green, nucleoli and chromatin matter of both the plants stain uniformly. Acetylation and deamination of

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histones prior to staining decrease uniformly the stainability of the chromatin and nucleolus of both the plants. However, with eosin Y compared to the normal plants, the asynaptic plants show a deeper staining of both chromatin and nucleolus. Moreover, acetylation prior to eosin Y staining removes the stainability of the mutant more strongly. These results indicate that the asynaptic mutant is richer in a labile histone fraction which is not detected by alkaline fast green staing after TCA hydrolysis, which removes labile histones. It is also clear that this fraction is lysine-rich since it is affected by acetylation. The staining reaction of the microsporocytes also lead to the same conclusion. In contrast to the root-tip cells, the microsporocytes show no appreciable coloration of the chromatin material of normal and mutant plants with any of the stains used. However, the nucleoli stain very well and, with bromphenol blue and eosin Y, the nucleoli of the mutant show more intense staining than those of the normal plants. When deamination or acetylation is carried out before staining, the loss of stainability is more from the mutant than from the normal. Similarly, eosin Y stainability of the mutant nucleoli is more susceptible to acetylation. Thus it is concluded that the asynaptic mutant of *Phaseolus mungo* contains an excess amount of histone which is labile and lysine-rich.

One of the possible roles of histones is that they are involved in coiling and condensation of chromosomes[5,6]. Moreover, it is the lysine-rich histone fraction which cross-links DNA-containing fibres to form condensed chromosomes[7]. Normally the pairing of homologous chromosomes takes place when the chromosomes are highly attenuated. Hence an excess of lysine-rich histone in meiotic prophase may induce precocious condensation leading to asynapsis. Alternatively, excess histone may mask the macromolecules which are responsible for pairing and cause asynapsis.

Zusammenfassung. Die Wurzelspitzen und meiotischen Prophasezellen normaler und asynaptischer Pflanzen von *Phaseolus mungo* wurden nach Azetylierung oder Desaminierung der Histone mit alkalischem Fastgreen, Bromphenolblau und Eosin Y gefärbt. Die asynaptischen Mutanten ergaben einen erhöhten Wert an labilen lysinreichen Kernhistonen.

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Additional Studies on the Effect of the Lactate Dehydrogenase Virus on Murine Sex Ratios[1]

Previously, Crispens[2] reported a significant alteration in the sex ratio of weanlings born to C57BL/Fg mice infected with the lactate dehydrogenase (LDH) virus[3] for 10–19 days before conception. The present paper will describe results obtained in further studies of this phenomenon.

Materials and methods. Adult male and female C57BL/Fg mice were given an i.p. injection of 0.1 ml of mouse plasma containing $10^{7.0}$ ID_{50}/ml of the LDH virus. 10 days later, they and the controls, which received an equivalent amount of saline, were mated with nontreated animals (2 males and 5 females per cage). Pregnant females were caged singly on the 17th to the 18th day of gestation; the number of babies born to each was recorded at birth. Dead animals, found during twice-daily observations, were examined for sex as well as gross pathological lesions. When 5 weeks of age, all progeny were weaned and sexed. The weanlings and their parents were then bled, and the units of LDH in plasma samples were determined as described previously[4].

Results. Table I shows that the sex ratio among the offspring of infected females mated to nontreated males was identical to that observed in control mice (51:49). By contrast, in the case of nontreated females mated to infected males, the sex ratio among their progeny was 43:57 (chi square, 7.15; $P < 0.01$). This finding of a significant difference between the 2 types of matings indicates that the alteration in sex ratio stems from a response of the male parent to the LDH virus. As such, the observation that none of the weanlings were infected in the 'male infected' group (Table I) takes on added importance since it both: (1) provides confirmation of results reported in an earlier paper[5]; and (2) suggests that the response occurs prior to fertilization.

In an attempt to learn more about the nature of the response, adult male C57BL/Fg mice received 5 i.p. injections, at 24 h intervals, of 20,000 units of normal mouse liver LDH[6]. Matings with nontreated females were established at 8 rather than 10 days since infected animals do not show the characteristic increase in plasma LDH activity until 36–48 h after virus inoculation[7]. Otherwise, the method of procedure was as described above.

The results are presented in Table II. It can be seen that the sex ratios among the offspring of nontreated females mated to enzyme-injected and saline-injected males were 45:55 and 51:49 respectively. While the difference between the 2 types of matings is not significant (chi square, 1.83; $P > 0.10$), it should be emphasized that

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