Sullivan *et al.*[4] reported growth inhibition and toxicity of glycine on a diet containing 4% casein at levels of amino acid from 2.5 to 20%. Jackson *et al.*[1] reported growth inhibition by 9% glycine as well as 35% gelatin when added to a normal casein diet. Their effects with glycine were not as marked as those reported in this paper. This may be due to their use of older animals (60-90 g) while our animals were started from weaning (35 g).

These data indicate the danger of imbalancing amino acid proportions by introducing high levels of a single amino acid even though it may be an essential amino acid. This is of particular importance in preparing experimental diets as some investigators have used high levels of glycine to balance nitrogen intake in protein and amino acid studies. Studies on other amino acids, to be reported, indicate that not all amino acids show this inhibitory effect.

Conclusion. 1. Gelatin will not allow optimum growth even when supplemented with all reported essential amino acids. In fact, less growth is obtained with gelatin plus amino acids than with the amino acids alone at the same level in the diet. 2. The presence of 6% glycine or 5% dl-phenylalanine or 5% l-proline in certain diets has an inhibitory effect on growth. 3. The inhibitory effect of glycine and proline on growth may explain the difficulty in supplementing gelatin for optimum growth.

[4] Sullivan, M. X., Hess, W. C., and Sebrell, W. H., *Pub. Health Rep.*, 1932, **47**, 75.

We wish to acknowledge and thank Miss Joan Staats for technical assistance.

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Failure to Demonstrate an Interrelationship Between Inositol and p-Aminobenzoic Acid in the Rat.

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Martin[1] has pointed out that although purified rations containing 6 B complex factors (thiamine hydrochloride, riboflavin, pyridoxine, calcium pantothenate, nicotinic acid and choline chloride) maintained apparently normal nutrition in the Rockland strain rat, addition of p-aminobenzoic acid or inositol to the above ration at levels of 0.01 and 0.02% respectively precipitated syndromes that failed to develop if all 8 factors were present. In the present experiment rats of another strain were placed at weaning on a purified ration containing the 6 B complex factors listed above to which p-aminobenzoic acid and inositol were added in doses ranging from 0.05 to 1.0% of the ration, and the effect of feeding these diets determined.

Procedure and Results. The basal ration consisted of sucrose 73.5, Vitamin Test Casein* 22, and Sure's Salt Mixture No. 1[2] 4.5. To each kg of the above were added 20 mg thiamine hydrochloride, 20 mg riboflavin, 20 mg pyridoxine hydrochloride, 100 mg calcium pantothenate, 100 mg nicotinic acid, 1200 mg choline chloride and 5 mg 2-methyl-naphthaquinone. Daily supplements of 800 mg corn oil (Mazola), 0.5 mg alpha-tocopherol, and an A-D concentrate† equivalent to 50 U.S.P. units of vitamin A and 5 U.S.P. units of vitamin D were also administered.‡ Inositol and p-aminobenzoic acid

[1] Martin, Gustav J., *Am. J. Physiol.*, 1942, **136**, 124.

[2] Sure, Barnett, *J. Nutrition*, 1941, **22**, 499.

* S.M.A. Corporation, Chagrin Falls, Ohio.

† Nopco Fish Oil Concentrate, assaying 800,000 U.S.P. units of vitamin A and 80,000 U.S.P. units vitamin D per gram.

‡ The vitamin content of the above ration is considerably in excess of minimum levels compatible with growth and reproduction.

TABLE I.
Composition of Experimental Diets and Number of Animals Employed.

Ration No.	Dietary supplement: Inositol %	Dietary supplement: *p*-Amino-benzoic acid %	Dietary base: Basal ration	Dietary base: Natural food ration*	No. of animals in group
A			X		6
B	.05		X		4
C	.5		X		4
D	1.0		X		6
E		.05	X		4
F		.5	X		4
G		1.0	X		6
H	1.0	1.0	X		5
I	1.25			X	4
J		1.25		X	4
K				X	6

* Purina dog chow supplemented once weekly with lettuce.

were incorporated in the above ration replacing an equal quantity of sucrose. The diets in Table I were employed.

Fifty-three male and female rats of the U.S.C. strain§ were placed at weaning (21 to 23 days) on the above rations. Animals were kept in metal cages with screen bottoms to prevent access to feces, and sufficient food was administered to assure *ad lib.* feeding. Feeding was continued for 8 weeks.

No significant difference in rate of growth or gross appearance was observed in any of the rats regardless of the dietary employed. At autopsy males in all dietary groups averaged 235±7 grams and females 190±10 grams, growth being slightly greater in the synthetic than the natural food series. Incorporation of inositol or p-aminobenzoic acid in doses ranging from 0.05 to 1.0% of the diet failed to exert any grossly visible deleterious effect. These findings are in marked contrast to those reported by Martin[1] who suggested that the incorporation of inositol in diets free of both this factor and p-aminobenzoic acid "stimulates the growth of organisms which utilize and destroy some member of the B complex, known or unknown, thus precipitating a deficiency of that factor. P-aminobenzoic acid either through stimulation or inhibition of bacterial growth precipitates an inositol deficiency." The results of the present experiment indicate that the mere presence of inositol or p-aminobenzoic acid in a purified ration containing the B complex factors listed above is not sufficient to assure a deficient state regardless of an apparent excess of these factors in the diet.

The present experiment differed from that of Martin in the strain of rat employed, the source of dietary fat, and the level and source of several vitamin supplements. The near marginal levels of thiamine, pyridoxine and choline employed by Martin as well as the factors enumerated above may be involved in explaining the diverse results.

Summary. No adverse effects were noted from the incorporation of inositol or p-aminobenzoic acid in a purified ration containing 6 B complex factors (thiamine hydrochloride, riboflavin, pyridoxine hydrochloride, calcium pantothenate, nicotinic acid and choline chloride).

§ A modified Wistar strain. From the animal colony, Department of Biochemistry, University of Southern California. Kindly provided by Dr. H. J. Deuel, Jr.