methane. The methyl esters were then diluted in diethyl ether and analysed in a Pye argon chromatograph. Polyvinyl acetate was used as the stationary phase, supported on 'Celite' (100–120 mesh). This stationary phase gave a separation at least as good as polyethylene glycol adipate and it had the further advantage of easier preparation and greater stability in the operating temperature (160–165° C.). The identification of the chromatograph peaks was made by using pure standards, supplemented by the method described by F. P. Woodford and C. M. Van Cent[3]. The area of each peak was measured by the triangulation procedure.

The main constituents are listed in Table 1. They are expressed as percentages of the total area of the major peaks. Oleic acid accounted for almost half. Apart from these major components, small traces of other fatty acids were found. These appeared to consist of *n*- nonanoic (pelargonic), decanoic (capric), pentadecanoic (15 : 0) and heptadecanoic (margaric) acids. Branched-chain fatty acids were also found as branched 14 : 0, 15 : 0, 16 : 0 and 18 : 0. The double-bond index[1] was 24·41 ± 3·7 (mean ± *S.D.*). The mean molecular weight was found to be 270·8, which is lower than it has previously been assumed. The mean number of oxygen molecules required for complete oxidation of one equivalent of fatty acid found during titration was calculated to be 24·32.

Table 1

Fatty acids		Mean (per cent) *S.D.*
Lauric	(12 : 0)	0·62 ± 0·16
Myristic	(14 : 0)	3·91 ± 1·87
Myristoleic	(14 : 1)	0·70 ± 0·34
Palmitic	(16 : 0)	25·12 ± 1·51
Palmitoleic	(16 : 1)	7·52 ± 2·14
Stearic	(18 : 0)	9·43 ± 2·33
Oleic	(18 : 1)	45·54 ± 4·42
Linoleic	(18 : 2)	7·04 ± 1·59

The results are different from those obtained by Dole *et al.*[4], who used Dole's method of extraction[5] of free fatty acids from plasma of human venous blood. The chief difference is in the percentage of oleic acid present, which Dole *et al.* found to be 28·9 per cent, and in the double-bond index which they found to be 28.

These differences may be due to variations in the diet of the subjects studied. Theoretically they could also be due to changes which might occur between arterial and venous blood. Work which is being carried out in this laboratory, however, suggests that the changes in composition of free fatty acids during the passage of blood through a resting limb are very small. It seems likely, therefore, that the composition of the free fatty acids extracted depends on the method used.

We are grateful to Dr. S. Paul and Mr. T. D. Heyes of the Research Department, Lever Bros., Ltd., for technical advice and for providing us with pure standards of fatty acids.

C. Chlouverakis
Peter Harris

Department of Medicine,
University of Birmingham,
Queen Elizabeth Hospital,
Birmingham, 15.

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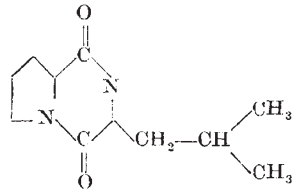
A New Cyclic Dipeptide from Peptone

While investigating the antifungal principle derived from cultures of a *Bacillus subtilis* strain, a crystalline substance was obtained as one of the by-products. It was necessary to decide whether the crystals were a metabolite of the organism or originally contained in peptone used as a dietary essential. The same procedure succeeded in isolating the same crystals from peptone. The peptone was commercially available as 'Mikuni peptone' in Japan.

Purification was effected by recrystallization from a benzene–petroleum ether mixture. The crystals, purified as colourless needles, melted at 159·5° and was readily soluble in alcohols, chloroform and benzene and insoluble in water, ether and hydrocarbons. Carbon–hydrogen and nitrogen analysis and molecular weight measurement by Rast's method indicated molecular formulæ of $C_{11}H_{18}N_2O_2$. The infra-red spectrum showed absorption at 3,260 cm., 1,670 cm. and 1,630 cm., but no absorption of the 1,550-cm. region, which is characteristic of a cyclic amide. Significant optical rotation in methanol solution was observed as $[\alpha]_D^2 = -132{\cdot}8°$. Hydrolysis with 6 *N* hydrochloric acid in a sealed tube at 110° for 20 hr. produced amino-acids. Qualitative analysis for the amino-acids by paper chromatography indicated equimolecular quantities of proline and leucine. All the results are in agreement for a cyclic dipeptide composed of two parts, proline and leucine.



It is perhaps of some interest that one of the 2,5-piperazinediones is contained in a natural substance, although certain proof of its original existence in raw meat evidently needs further investigation.

Work on the biological activity of the peptide is being carried on in several organisms.

We are grateful to Dr. Ichiji Mibuchi, Shizuoka College of Pharmacy, for discussion.

Takuo Kosuge
Hiroko Kamiya

Shizuoka College of Pharmacy,
Shizuoka, Japan.

Stabilization of Thymidylate Kinase Activity by Thymidylate and by Thymidine

We have recently reported that an increase in thymidylate kinase activity occurs in rat liver and kidney following injection of thymidine into the intact animal[1]. Subsequent work has revealed that this enzyme activity is labile in the absence of, but stable in the presence of, thymidylate or thymidine. In this communication we wish to report the results of this work on stabilization of thymidylate kinase activity, and to consider the possible relation of these observations to the increase in kinase activity which follows thymidine administration.

Liver and thymus were removed from 200–300 gm. male Wistar rats, which were killed by decapitation. Regenerating liver was obtained from rats subjected