ERRATUM

In articles 7231, 7385 and 7404, *Microsporon apiosporum* should read *Monosporum apiospermum*.

PROCEEDINGS

OF THE

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

VOL. 31. JUNE, 1934. No. 9.

Iowa Section.

State University of Iowa, May 22, 1934.

7425 C*

Utilization of Free and Acetylated l- and dl-Tryptophane by Oidium Lactis.

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It has long been known that *Oidium lactis* is able to utilize the nitrogen of several natural amino acids for growth when such acids serve as the sole source of nitrogen. Under such circumstances, *l*-tryptophane is converted into *l*-indolelactic acid.[1] In conjunction with a series of studies on tryptophane metabolism recorded elsewhere, in which *Oidium lactis* was used to synthesize indolelactic acid,[2] it seemed of interest to compare the availability of *l*- and *dl*-tryptophane and acetyl-*l*- and acetyl-*dl*-tryptophane as sources of nitrogen for the growth of this mold.

Accordingly, 8 liters of a synthetic medium containing 80.0 gm. invert sugar, 8.00 gm. K_2HPO_4, 0.800 gm. $MgSO_4$, and traces of NaCl and $FeCl_3$ were prepared and divided equally among eight 2800 cc. culture flasks. To each of one pair of the flasks were

* P represents a preliminary, C a complete manuscript.

1 Ehrlich, F., and Jacobsen, K. A., *Ber.*, 1911, **44**, 888.

2 Bauguess, L. C., and Berg, C. P., *J. Biol. Chem.*, 1934, **104**, 675.

added 2.000 gm. of *l*-tryptophane; to each of a second pair, 2.000 gm. of *dl*-tryptophane; to each of a third pair, 2.412 gm. of acetyl-*l*-tryptophane; and to each of the fourth pair, 2.412 gm. of acetyl-*dl*-tryptophane. The flasks were fitted with cotton plugs and sterilized. A 10 cc. aliquot was withdrawn from each for initial N analysis (by micro-Kjeldahl). To each flask were then added equal volumes of a suspension of *Oidium lactis* (American Type Culture Collection, No. 4798). The culture media were incubated at 20°C. for 4 weeks, at the end of which time they were sterilized. N determinations were again made on aliquots of each of the mycelium-free filtrates. The indolelactic acid was isolated from the *l*- and *dl*-tryptophane media according to the method of Ehrlich and Jacobsen[1] and the tryptophane was obtained from the residues by isolation through the mercuric sulfate salt, as in its preparation from protein.[3] No significant changes in N content having been observed in the acetyl-tryptophane media, no attempts were made to isolate indolelactic acid.

Results of the *l*- and *dl*-tryptophane studies appear in Table I. The final N contents of the mycelium-free *l*- and *dl*-tryptophane media did not differ appreciably. The tryptophane isolated from the *dl*-tryptophane flasks was strongly dextro-rotatory, indicating that the *l*-tryptophane was utilized preferentially. The specific rotation of the tryptophane in the *l*-tryptophane flasks had not changed. The methods of isolating the tryptophane and the indolelactic acid are not to be regarded as quantitative. The amounts isolated, in each case, account for approximately 70% of the residual N. *d*-Tryptophane apparently does not inhibit the utilization of N by the mold. In each instance, as in previous studies,[2] the indolelactic acid isolated possessed the same optical properties, whether isolated from the *l*- or from the *dl*-tryptophane flasks. There is some doubt as to whether enough of the *d*-tryptophane was utilized to warrant con-

TABLE I.

Tryptophane in Culture Media gm.	Tryptophane Isolated		Indolelactic Acid Isolated		N Content of Mycelium-free Media	
	gm.	$[\alpha]_D^{20°}$, 0.5 % in water	gm.	$[\alpha]_D^{20°}$, 1.31 % in water	Initial mg..	Final mg.
2.0 (*l*)	0.390	—32.8	0.84	—5.2	275.6	153.8
2.0 (*l*)	0.384	—33.0	0.80	—5.2	275.6	152.9
2.0 (*dl*)	0.320	+21.8	1.01	—5.2	276.0	158.4
2.0 (*dl*)	0.323	+22.0	0.95	—5.2	276.0	158.0

[3] Hopkins, F. G., and Cole, S. W., *J. Physiol.*, 1901, **27**, 418; Cox, G. J., and King, H., *Organic Syntheses*, 1930, **10**, 100.

cluding definitely that this isomer is converted into *l*-indolelactic acid, as the data suggest. A test of *d*-tryptophane alone is contemplated to clear up this point.

Only traces of mycelium were obtained in the acetyl-*l*- and acetyl-*dl*-tryptophane culture flasks. N analyses of the mycelium-free cultures showed that their total N content (275.0 mg.) had not decreased during the period of incubation. Apparently, *Oidium lactis* is unable to hydrolyze either acetyl-*d*- or acetyl-*l*-tryptophane. This is in striking contrast to the utilization of acetyl-*l*-tryptophane by the rat.[4]

7426 C

Effect of Thyroparathyroidectomy and Thyroxin on Rate of Atrophy of Skeletal Muscle.

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Previous investigations have indicated that the thyroid secretion exerts an influence on skeletal muscle. Simpson[1] suggested that the lack of development of skeletal muscle in cretin sheep might be due to inactivity rather than a specific action of thyroid secretion on muscle growth. Gudernatsch[2] showed that the feeding of thyroid material caused an accelerated rate of atrophy of the tadpole's tail during metamorphosis. This effect has usually been attributed to the mechanical influences of increased growth changes rather than a specific effect of thyroid substance on autolysis.[3]

This report is concerned with the influence of thyroparathyroidectomy and thyroxin administration on the rate of atrophy of the denervated gastrocnemius muscle of the rat. We have previously reported[4] some effects of denervation on rat's skeletal muscle and described the technique employed. The weight of the denervated muscle has been compared to that of the opposite control muscle in a series of adult animals 7, 14, 21 and 28 days after section of the

[4] Berg, C. P., Rose, W. C., and Marvel, C. S., *J. Biol. Chem.*, 1929, **85**, 207; du Vigneaud, V., Sealock, R. R., and Van Etten, C., *J. Biol. Chem.*, 1932, **98**, 565; Berg, C. P., *J. Biol. Chem.*, 1934, **104**, 373.

[1] Simpson, E. D., *Am. J. Physiol.*, 1927, **80**, 735.

[2] Gudernatsch, J., *Am. J. Anat.*, 1914, **15**, 431.

[3] Bradley, H. C., *Physiol. Rev.*, 1922, **2**, 415.

[4] Hines, H. M., and Knowlton, G. C., *Am. J. Physiol.*, 1933, **104**, 379.