Mediated control of polyphosphotase in Neurospora crassa

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Mediated control of polyphosphatase in Neurospora crassa

Abstract
Phosphate-mediated control of polyphosphate in Neurospora crassa

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Considerable information is available on the accumulation of polyphosphates and on the enzymes metabolizing them (Kulaev (1975) Rev. Physiol. Biochem. Pharmacol. 73: 131). However, very little is known about the effects that regulate the level of polyphosphates in vivo. We (EC 3.6.1.11, polyphosphate phosphorylase).

Figure 1. Effect of initial phosphate concentration in the culture medium on the levels of polyphosphate during growth of N. crassa (o-o), 8.7 mg% phosphate; (e-e), 1.7 mg% phosphate.

Biophys. Ada 321: 336 for the polyphosphatase of Endomyces magnusii, the above results demonstrate the effect of phosphate in regulating the levels and activity of polyphosphate in N. crassa which in turn may regulate the intracellular concentration of polyphosphates. Phosphate levels in the medium also control the levels and activity of nucleotide degrading enzymes including alkaline phosphatase in N. crassa (Mattoo and Shah (1974) Z. Allge. Microbiol. 14: 581). We thank Dr. Kerstin Gezelius, Department of Plant Physiology, University of Umea (Sweden) for the gift of sodium polyphosphate and Prof. V. V. Modi for his continuing interest.

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Maxwell, J.B., J. Anesi, S. Cadwell, V. Coffman, R. Hoeffe, R Nolan, T. Parker and D. Toon.

All��ls at ser (JBM5) and ser-3, an linkage group I.

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Mutant ser (JBM5) was isolated by filtration enrichment (V. W. Woodward, J. R. de Zeeuw and A.M. Srb (1954) PNAS 40: 192) following ultraviolet irradiation to twenty percent survival of al-2 (15300) cot-1 (C102(2)) A. Preliminary crosses indicated that ser (JBM5) was on linkage group I since it showed linkage to mating type, to locate ser (JBM5) with respect to ser-3, a spore isolate of genotype ser (JBM5); 3; or-3, a was crossed with ser-3 (47995), A (FOSC #2113) of Westergaard with T8(S-2) and 0.2 g/L L-serine, 0.175 g/L L-arginine and 2% agar. Random spores were isolated onto small slants of appropriately supplemented Vogel’s medium containing 2% sucrose. The single spore isolates were heat shocked at 60°C for 45 minutes and incubated at 32°C. Of 1026 spore isolates, 528 required serine alone and 498 required both serine and arginine. No serine-independent recombinants were obtained. We conclude that ser(JBM5) is allelic with ser-3.

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