Inducible and constitutive β-galactosidase formation in cells recovering from protein synthesis inhibition

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Abstract:

Inducible and constitutive β-galactosidase formation and radioactive amino acid incorporation were measured in cells recovering from various treatments which inhibit protein synthesis in the cell. Undelayed β-galactosidase formation was found in stringent auxotrophs recovering from amino acid starvation, in cells recovering from glycerol or potassium starvation, and in bacteria recovering from puromycin treatment. Delayed β-galactosidase formation was found in relaxed auxotrophs recovering from amino acid starvation and in prototrophs recovering from chloramphenicol or from tetracycline treatment. The length of this delay was directly proportional to the duration of the treatment. All cells recovering from the various treatments exhibited a slightly decreased rate of β-galactosidase formation and an increase in radioactive amino acid incorporation.

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