Table 2 *Corrosion rates of MS in 1N H_2SO_4 (deaerated) obtained from single and multitransient methods with and without hexamine inhibitor $\tau = 50$ m sec*

	I_{corr} (mA/cm^2)			
	Single transient method		Multitransient method	
Concentration of hexamine (mM)	Cathodic polarization	Anodic polarization	Cathodic polarization	Anodic polarization
0	1.393	1.428	1.428	1.428
10	0.385	0.385	0.385	0.400

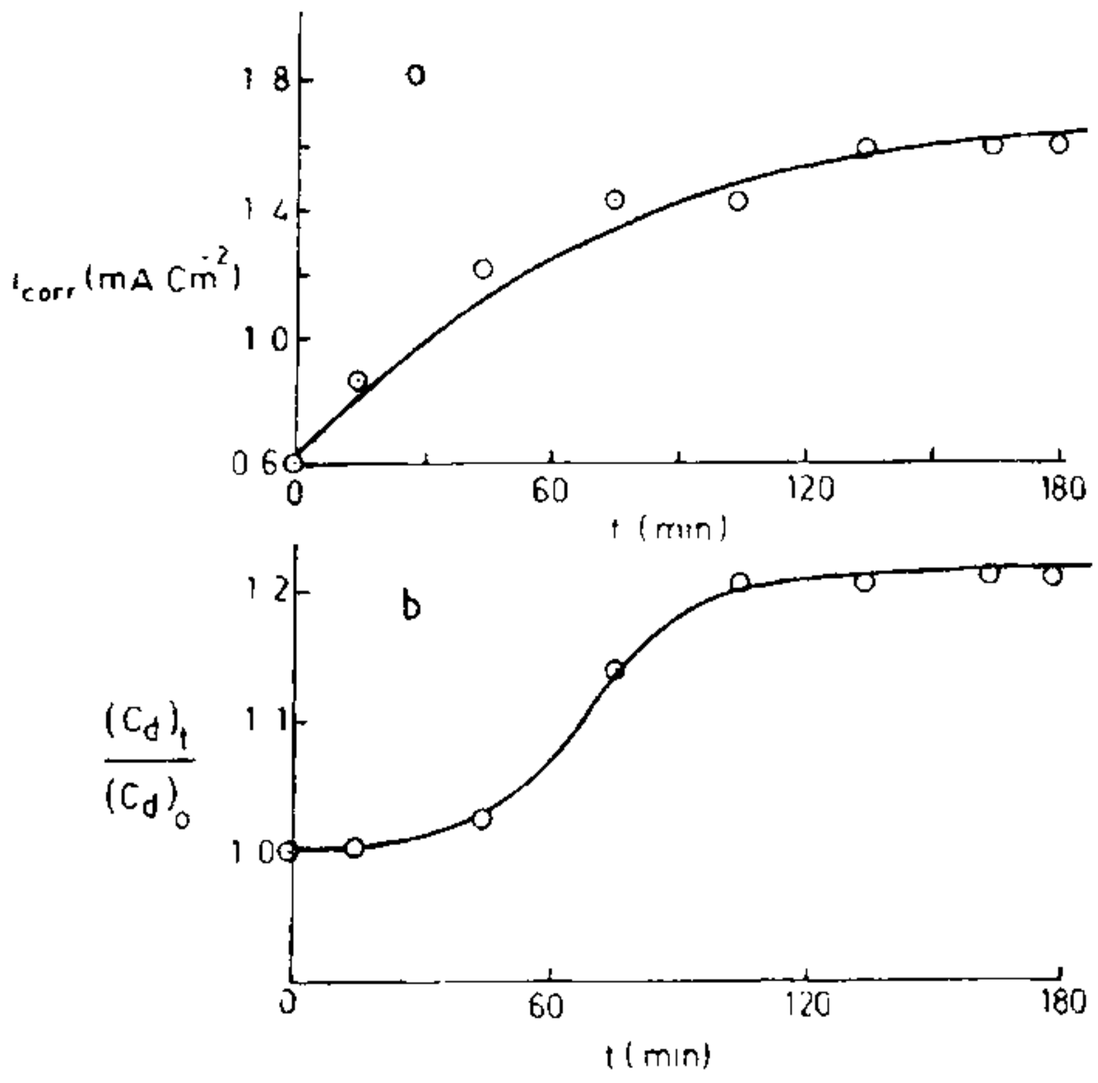

Figure 2. Time dependence of (**a**) i_{corr} and (**b**) area of the electrode.

lead to such artefacts as variation of i_{corr} with time constant τ.

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EFFECT OF PHOTOPROTECTION OF UV IRRADIATED *ESCHERICHIA COLI* ON THE INDUCTION OF L-ARABINOSE ISOMERASE

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IT was reported from this laboratory that catabolite repression mediated via cyclic AMP is partially responsible for causing the inhibition of L-arabinose isomerase induction in *Escherichia coli* B/r irradiated with UV light[1,2]. It was also shown that the enzyme synthesizing system is released from UV light induced catabolite repression when the cells recover from the damage[3]. Swenson[4] showed that illumination of cells by near UV light prior to far UV irradiation protected them from the inhibition of β-galactosidase induction. The aim of the present study was to find out whether similar photoprotective effect is observed in L-arabinose isomerase synthesizing system.

L-arabinose isomerase was induced and assayed in the same way as described earlier[5]. The methods of tris-EDTA treatment of the cells and UV light irradiation have also been described previously[2]. Before irradiating with 540 ergs/mm^2 of UV light (peak output at 254 nm) at room temperature, tris-EDTA treated cells in minimal medium containing casamino acids (0.025%) were held at 5°C and il-

luminated with near UV light (peak output at 365 nm) for 20 min. The dose of near UV light used for photoprotection was 8×10^4 ergs/mm^2. Since there was no detectable growth at 5°C, experiments were conducted in which all holdings and illumination procedures were done at this temperature. Induction was started immediately after UV irradiation and the level of induced enzyme was determined at different time intervals. The results are presented in figure 1. Unilluminated cells held at 5°C for 20 min synthesized L-arabinose isomerase upon induction at the same rate as the cells which were not held. Near UV light exposure at 5°C (without UV irradiation) inhibited L-arabinose isomerase synthesis by nearly 50%. Cells irradiated with UV light at room temperature without prior cooling and holding synthesized the enzyme at a reduced rate up to 90 min after which it increased strikingly as the recovery phase began. When cells were held at 5°C for 20 min and then irradiated with UV light, L-arabinose isomerase induction occurred at a rapid rate up to 60 min, the rate dropped off after that and became almost similar to that in UV irradiated cells without any prior treatment. The cells which were given near UV light treatment for 20 min at 5°C and then irradiated showed an increase in the rate of L-arabinose isomerase synthesis up to 70 min and then the enzyme synthesis ceased for a shorter period, only to begin again after 90 min.

Thus it is clear that exposure of cells to near UV light by holding them at 5°C or only holding them at 5°C prior to UV irradiation protected them from the inhibitory effect of UV light on the L-arabinose isomerase synthesizing system (figure 1). These results are similar to those observed in the case of β-galactosidase synthesis[4]. The pattern of L-arabinose isomerase synthesis in cells photoprotected at 5°C (figure 1) is similar to that obtained from cyclic AMP treatment after UV irradiation[1]. It appears that irradiated cells were able to maintain cyclic AMP levels when given these treatments.

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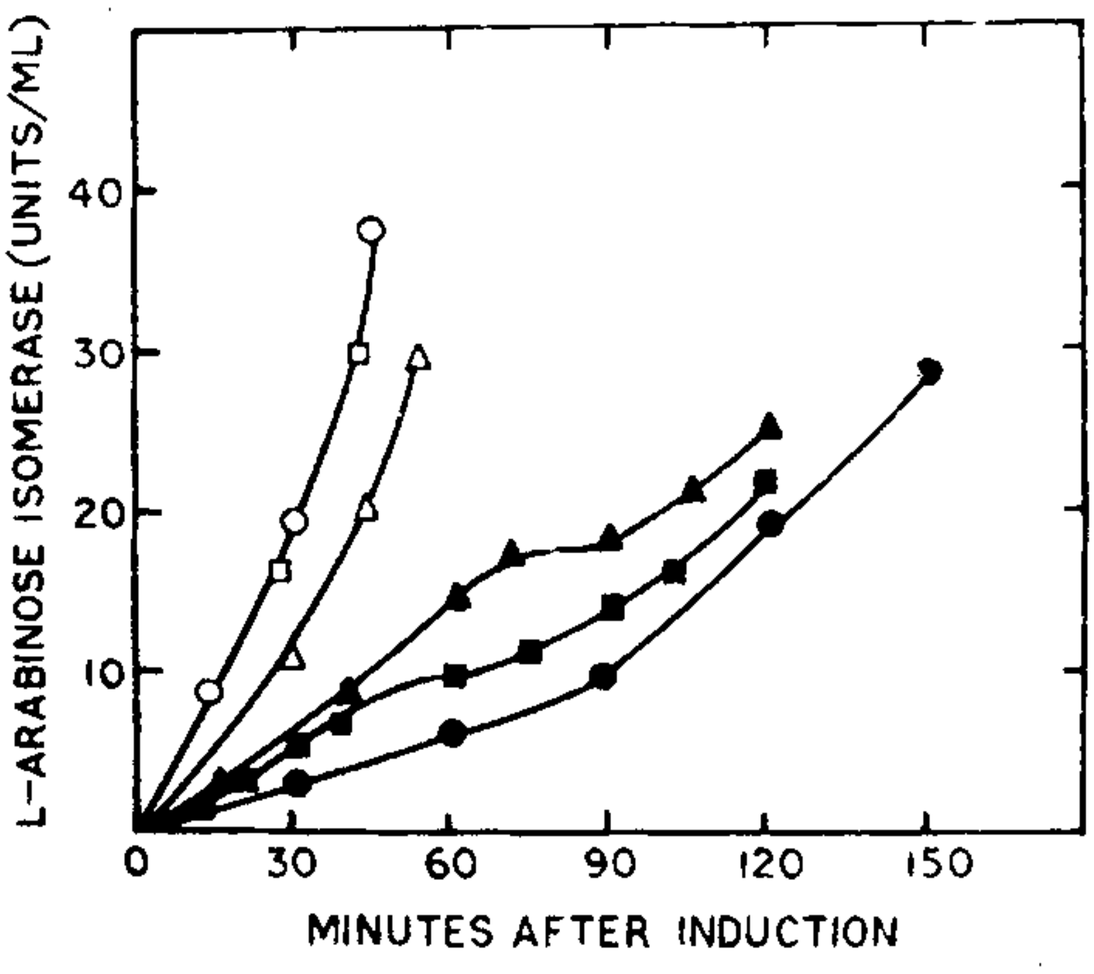

Figure 1. Effect of near UV light exposure to cells prior to far UV irradiation on the induction of L-arabinose isomerase. The level of the enzyme was determined at different time intervals after the addition of L-arabinose (1.33×10^{-2} M) in tris-EDTA treated *E. coli* B/r cells which had been unirradiated (○), unirradiated and held at 5°C(□), illuminated by near UV light (365 nm) at 5°C (△), irradiated with far UV light (254 nm) (●), and irradiated with far UV light after holding them at 5°C with (▲) and without (■) illumination by near UV light.

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SYNTHESIS AND INVESTIGATIONS OF THE NEW ADDUCT OF S_4N_4

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THE halogen derivatives of S_4N_4 and their complexes with metal compounds have been reported[1-9]. But an adduct of S_4N_4 with H_2F_2 is neither prepared and studied nor has it been used as a ligand to prepare its complexes. The new adduct of S_4N_4, nominated as tetrathiazyl dihydrofluoride is synthesized and is reported here.