Wellcome and Co. through the courtesy of Edwin J. de Beer. Dextran was provided by Abbott Laboratories; molecular weight 79, 400, low fraction, 28, 300, high fraction 180, 800. 5-Hydroxytryptamine was serotonin creatine sulfate (Nutritional Biochemical Co.). This work was partially aided by grants from the Ministry of Health of the Province of Quebec (Federal-Provincial Health Research Grants).

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Protection against X-irradiation by 3-Amino-1,2,4-triazole

Heim, Appleman, and Pyfrom (*1*) recently demonstrated that after intraperitoneal injection of 3-amino-1,2,4-triazole (AT) into rats, the liver and kidney catalase activity was sharply reduced. Our first conclusion, of course, was tentatively to consider this compound to be a catalase inhibitor. Since such radiation protectors as azide (*2*) and cyanide (*2, 3*) have also been shown to inhibit catalase *in vitro* (*4*) and, at least in the case of azide, *in vivo* (*5*), it was decided to test AT also as a protective agent against ionizing radiation (*6*). Injection of a catalase inhibitor may appear to be paradoxical in attempting to protect against irradiation lethality. However, one must consider such possible mechanisms as the formation of a catalase-inhibitor complex more radiation-stable than the uncomplexed catalase (*7*).

Table 1 indicates that intraperitoneal injection of AT before whole body x-irradiation rather consistently protects a large percentage of mice against 650 r of x-rays and significantly prolongs the survival of animals that receive 750 or 850 r of x-rays. (If all data shown are pooled for mice receiving 850 r alone, and for mice receiving AT followed by an 850-r dose, the Student's t value for the difference in survival time is 2.90, with a total population in each case of 59 mice killed. This represents $0.001 < P < .005$.) If administered before a 1700-r dose, or after any dose of x-rays, AT is without effect. Even if AT is administered as long as 24 hours before the irradiation, some prolongation of survival time is conferred. It might be mentioned that the doses of AT employed were well tolerated by the mice.

Even though AT per se has been found not to be an inhibitor of catalase (*8*), the possibility cannot be excluded that a catalase mechanism is in some way relevant to the radiation protection, for a single injection of this compound will cause a 65-percent reduction in liver catalase activity as late as 24 hours after injection (*8*). The mechanism of the biological effects of AT is presently being further investigated.

After this work had been completed, a paper appeared by Friedberg (*9*), indicating no significant effect of AT on mortality rate after 934 r. His data do show, as do ours, prolongation of survival time.

Table 1. Protection of mice by 3-amino-1,2,4-triazole (AT) against whole body x-irradiation.

Amino-triazole (mg/kg)	X-ray (r)	Order of treatment	Number of mice	30-day survivors (%)	Average survival time (days)*
		Experiment 1			
0	450		10	90	9.0
2000	450	AT, x-ray	12	92	13.0
0	650		12	0	12.5
2000	650	AT, x-ray	10	70	15.7
0	850		12	0	8.9
2000	850	AT, x-ray	12	8	12.2
4000	0		11	100	
		Experiment 2			
0	850		8	0	6.3
2250	850	AT, x-ray	12	8	9.7
2250	0		12	100	
		Experiment 3			
0	850		11	0	11.5
1817	850	AT, x-ray	11	0	13.5
1817	850	x-ray, AT	11	0	11.0
0	1700		11	0	4.5
1817	1700	AT, x-ray	11	0	4.4
		Experiment 4			
0	850		12	0	13.4
1817	850	AT, x-ray	12	17	13.3
1817	850	x-ray, AT	12	0	12.1
0	1700		11	0	4.0
1817	1700	AT, x-ray	12	0	4.5
		Experiment 5			
0	650		16	19	13.9
2000	650	AT, x-ray	16	75	19.3
0	750		16	0	11.1
2000	750	AT, x-ray	13	0	13.6
0	850		16	0	10.6
2000	850	AT, x-ray	16	0	12.0
2000	0		16	100	

* Average survival time refers only to those animals that succumbed within the 30-day period.

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Use of Δ4-Cholestenone to Reduce the Level of Serum Cholesterol in Man

In 1953 Tomkins *et al.* (*1*) demonstrated that a single feeding of 4-cholestene-3-one (cholestenone) to rats reduced the capacity of their livers to convert acetate to cholesterol. Soon after this observation was made, studies were initiated in our laboratory to test the effects of prolonged administration of cholestenone on the level of plasma cholesterol.

Dogs were fed 1 g of cholestenone every 8 hours for 17 days. In one dog, the concentration of plasma cholesterol fell from an initial value of 100 mg/100 ml to 70 mg on the eighth day of feeding, to 65 mg on the 12th day, and to 55 mg on the 17th day. In another dog, the levels of plasma cholesterol were 115 before the cholestenone feeding was begun and 75, 80, and 70, respectively, on the 8th, 12th, and 17th days of feeding.

Substantial reductions in the levels of plasma cholesterol were also observed in chickens that were fed Purina broiler