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Ref.: 1. Levin, J., et al., New England Journal of Medicine, 283, 1313,

2. Reinhold, R., and Fine, J., Proc. Soc. Exper. Biol. and Med., 137,

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 Cooper, J. F., Levin, J., and Wagner, H. N., J. Lab. Clin. Med., 78, 138, 1971.

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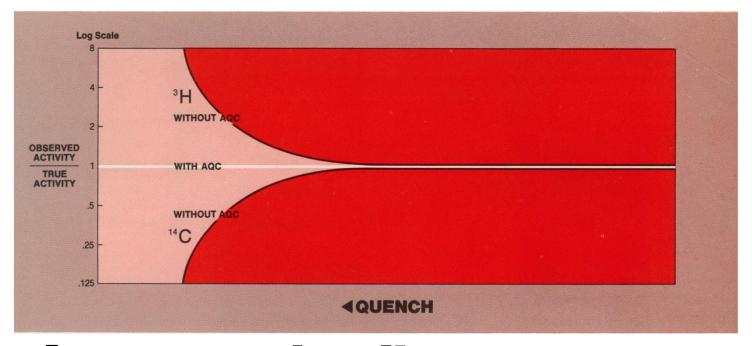
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