M. L. Weisfeldt, H. L. Greene, L. C. Becker, and B. Pitt, *Br. Heart J.*, **38**, 612 (1976).

(3) B. L. McNiff, E. F. McNiff, and H.-L. Fung, *Am. J. Hosp. Pharm.*, **32**, 173 (1979).

(4) J. K. Sturek, T. D. Sokoloski, W. T. Winsley, and P. E. Stach, *ibid.*, **35**, 537 (1978).

(5) D. J. Ludwig and C. T. Ueda, *ibid.*, **35**, 541 (1978).

(6) P. Suphajettra, J. H. Strohl, and J. K. Lim, *J. Pharm. Sci.*, **67**, 1394 (1978).

(7) F. K. Bell, *ibid.*, **53**, 752 (1964).

(8) H.-L. Fung, P. Dalecki, E. Tse, and C. T. Rhodes, *ibid.*, **62**, 696 (1973).

(9) S. K. Yap, C. T. Rhodes, and H.-L. Fung, *Am. J. Hosp. Pharm.*, **32**, 1039 (1975).

(10) "The United States Pharmacopeia," 19th rev., Mack Publishing Co., Easton, Pa., 1975.

(11) W. M. Ayres, G. C. Whitnack, and R. T. Merrow, Navweps Report 7608, NOTS TP 2604, 1961.

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Specificity of Nitroglycerin Assays: A Response

Keyphrases □ Nitroglycerin—analysis, stability, various procedures compared □ Vasodilators, coronary—nitroglycerin, stability analysis, various procedures compared □ Stability—nitroglycerin, analysis, various procedures compared

To the Editor:

This response will attempt to clarify several points raised by Morrison and Fung (1) concerning a report by Suphajettra *et al.* (2), which had discussed the possible formation of an interaction compound or complex between nitroglycerin in solution and polyethylene glycol 400. It was then suggested (2) that a loss of nitroglycerin "stability" had occurred due to the sequestering effect on it, which prevented its analysis by both UV (3) and colorimetric (4) techniques. As a result, the different apparent nitroglycerin degradation rates due to polyethylene glycol 400 (Fig. 1) as determined by these two methods simply reflected the relative recoveries of intact nitroglycerin or the "assayable" compound, attributable on one hand to "the more drastic hydrolysis procedure employed in the Bell method, which resulted in a relatively greater breakdown of the reaction compound . . ." (2). It was not our intention to imply that a basic deficiency existed with the UV–kinetic assay for determining free nitroglycerin molecules.

Furthermore, the term stability was used generically in the context of the report to describe not only degraded molecules but also those firmly bound or sequestered and, consequently, not available for analysis. Inasmuch as colorimetric nitroglycerin determination depends on the successful breakdown, in some stoichiometric fashion, of the molecule to a decomposition product, *i.e.*, nitrites, this method obviously cannot be regarded as stability indicating. It is precisely because of such a premise that the formation of an interaction compound, which effectively sequestered nitroglycerin from analysis by these two methods, was proposed. Furthermore, had no nitroglycerin "complex" been formed, the presence of nitrite ions, regardless of source (*i.e.*, as a chemical contaminant or as a nitroglycerin decomposition product), would produce linear curves closely parallel to the abscissa (Fig. 1) following the Bell colorimetric assay.

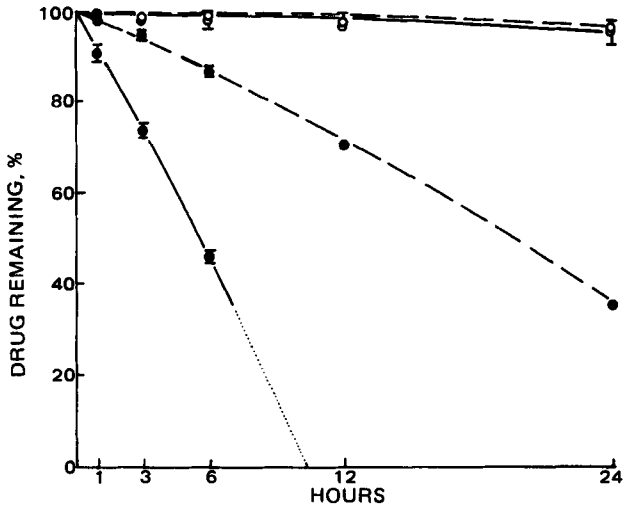

Figure 1—*Percentage of nitroglycerin remaining in povidone* (○) *and polyethylene glycol 400* (●) *solutions as a function of time at 80 ± 0.5° compared using the spectrophotometric* (—) *and colorimetric* (– –) *methods.*

(1) R. A. Morrison and H.-L. Fung, *J. Pharm. Sci.*, **68**, 1197 (1979).

(2) P. Suphajettra, J. H. Strohl, and J. K. Lim, *ibid.*, **67**, 1394 (1978).

(3) H.-L. Fung, P. Dalecki, E. Tse, and C. T. Rhodes, *ibid.*, **62**, 696 (1973).

(4) F. K. Bell, *ibid.*, **53**, 752 (1964).

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Percutaneous Butyrolactone Absorption in Rats

Keyphrases □ Butyrolactone—percutaneous absorption, with and without depilation, rats □ Hypnotics—butyrolactone, percutaneous absorption, with and without depilation, rats

To the Editor:

Butyrolactone (I) is a relatively nontoxic hypnotic agent when administered intravenously and orally to rats (1, 2). When I is introduced into the systemic circulation, it is instantaneously and completely converted to γ-hydroxybutyric acid (II). The latter is an endogenous substance in

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