To the Editor:

Bystrom et al. (1) recently reported substantial peptidase activity in human plasma that had been incubated at 37 °C to generate angiotensin I (Ang I)1 during the clinical plasma renin activity (PRA) assay. If this result is correct, it would call into question many of the PRA results previously reported by our laboratory and by Quest Diagnostics. Given that plasma is an excellent incubation medium for bacteria, we have long considered bacterial contamination a potential source of angiotensin peptide degradation during the Ang I–generation step of the clinical PRA assay (2, 3). For that reason, we routinely add neomycin sulfate to plasma samples before carrying out the Ang I–generation step at 37 °C. Bystrom et al. did not do that. Adding neomycin sulfate is like an insurance policy: Most of the time it is not necessary, but sometimes it is essential. We suggest that Bystrom et al. directly test whether adherence to the classic protocol, including adding neomycin, succeeds in reducing or eliminating the problem of sporadic degradation of Ang I observed in their assay. Until then, it would be prudent to restore adding a bactericidal agent to the Ang I–generation step of their clinical PRA assay or to use another means to protect the generated Ang I, such as anti–Ang I antibodies (4) or heat inactivation of protein-containing assay buffers.

Several features of the Ang I degradation reported by Bystrom et al. (1) indicate the possibility of bacterial contamination: (a) the presence of both carboxypeptidase and aminopeptidase-like activity (their Fig. 4C), (b) a lower rate of Ang I degradation during the shorter Ang I–generation times (their Fig. 2), (c) the independence from the PRA, and (d) the lack of any reported indication of specificity by patient or blood-collection site. Bacterial contamination could occur at many sites: from the patient, at the blood-collection site, during separation of the plasma, and in the laboratory, to name a few.

References


Jean E. Sealey2,3*
John H. Laragh3

Departments of 2 Medicine and 3 Cardiothoracic Surgery
Weill Cornell Medical College
New York, NY

*Address correspondence to this author at:
Weill Cornell Medical College
1300 York Ave.
Box 266
New York, NY 10065-4805
Fax 561-369-3479
E-mail: jsealey@med.cornell.edu

Previously published online at DOI: 10.1373/clinchem.2010.156596

Copyright (C) 2010 by The American Association for Clinical Chemistry