

Reply to the Letter From A. Babu

Dear Sir,

Last year, we published a brief communication in which we described a reduction of shortening velocity in response to osmotic compression of the diameters of skinned single fibers from rat soleus and svl (superficial region of the *vastus lateralis*) muscles (1). In a recent letter to the editor, A. Babu (2) indicated that the main results reported in our communication were simply a confirmation of their earlier work (3, 4). While we indeed did arrive at a similar conclusion, we believe that the experimental approach used by Gulati and Babu (3, 4) made difficult a straightforward interpretation of their data.

In our study, skinned single fibers were osmotically compressed with dextran and the effects on V_{\max} due to variations in cell diameter were determined. Thus, in our protocol, cell diameter was varied independently of changes in the ionic strength of the solution bathing the myofilaments. In contrast, in the experiments by Gulati and Babu (3, 4), changes in the diameters of living fibers were accompanied by changes in solution ionic strength. This is an important point since there are conflicting reports regarding possible effects of ionic strength upon V_{\max} in living fibers. Edman and Hwang (5) reported that V_{\max} was significantly altered by changes in ionic strength, while Gulati and Babu (3, 4) found no effect of ionic strength on velocity. Since in this regard we have no data of our own, we view this question as one which, in living fibers, is unresolved.

The Editors regret that because of miscommunication, Drs. Metzger and Moss were not given the opportunity to reply to an earlier letter to the Editor by Dr. Babu.

In discussing the rationale for our study, we cited the disparate results in living fibers regarding the effects of ionic strength on shortening velocity as a basis for experimentation on skinned fibers in which fiber diameter was the single independent variable. This allowed us to conclude directly that the osmotic compression of the fiber was the cause of the observed reductions in V_{\max} .

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