Letters to the Editor

Correspondence re: L. G. Boros *et al.*, Oxythiamine and Dehydroepiandrosterone Inhibit the Nonoxidative Synthesis of Ribose and Tumor Cell Proliferation. Cancer Res., *57:* 4242–4248, 1997

Letter

I read with great interest the paper entitled "Oxythiamine and Dehydroepiandrosterone Inhibit the Nonoxidative Synthesis of Ribose and Tumor Cell Proliferation" by Boros *et al.* (1). Within the discussion, the authors discuss our work on the double-stranded RNA-dependent protein kinase p68 in breast carcinoma (2). Boros *et al.* state that "It is likely that *p68*, or TK,[1] although a potent inhibitor of protein synthesis thus mistakenly believed to be a tumor suppressor, is rather a tumor promoter" (1). Although we do not dispute that TK may be an important tumor promoter, the association of our "p68" with TK is in error. The authors reference a paper from Schimmer *et al.* (3) identifying p68 as mouse TK. The authors failed to realize that, although Schimmer *et al.* (3) did isolate a M_r 68,000 protein (hence designated p68) from Y1 mouse adrenocortical tumor cells, this is clearly a different protein from the one we described (now termed PKR). First, although PKR is a M_r 68,000 protein in humans, the form of PKR found in the mouse is a M_r 65,000 protein (p65; Ref 4). Second, Schimmer's p68 was localized to mouse chromosome 16B1 and human chromosome 3p21.2 (3). In contrast, PKR has been localized to mouse chromosome 17E2 and human chromosome 2p21–22 (5). Finally, the coding sequence of Schimmer's p68 is vastly different from that described for PKR (3, 6). This illustrates the potential confusion that may arise when molecular weight designations are given to incompletely characterized protein products and the need for critical reading of the literature. These criticisms do not detract from the authors' description of the role of TK in nucleic acid synthesis or cell proliferation. The assertion of any role of TK in the regulation of cellular protein synthesis is not supported, and the linking of the double-stranded RNA-dependent protein kinase (p68/PKR) with TK is erroneous.

G. Kenneth Haines III
Northwestern University Medical School
Chicago, Illinois 60611

References

1. Boros, L. G., Puigjaner, J., Cascante, M., Lee, W-N. P., Brandes, J. L., Bassilian, S., Yusuf, F. I., Williams, R. D., Muscarella, P., Melvin, W. S., and Schirmer, W. J. Oxythiamine and dehydroepiandrosterone inhibit the nonoxidative synthesis of ribose and tumor cell proliferation. Cancer Res., *57:* 4242–4248, 1997.
2. Haines, G. K., Cajulis, R., Hayden, R., Duda, R., Talamonti, M., and Radosevich, J. A. Expression of the double-stranded RNA-dependent protein kinase (p68) in human breast tissues. Tumor Biol., *17:* 5–12, 1996.
3. Schimmer, B. T., Tsao, J., and Czerwinski, W. Amplification of the transketolase gene in desensitization-resistant mutant Y1 mouse adrenocortical tumor cells. J. Biol. Chem., *271:* 4993–4998, 1996.
4. Meurs, E. F., Galabru, J., Barber, G. N., Katze, M. G., and Hovanessian, A. G. Tumor suppressor function of the interferon-induced double-stranded RNA-activated protein kinase. Proc. Natl. Acad. Sci. USA, *90:* 232–236, 1993.
5. Barber, G. N., Edelhoff, S., Katze, M. G., and Disteche, C. M. Chromosomal assignment of the interferon-inducible double-stranded RNA-dependent protein kinase (PRKR) to human chromosome 2p21–p22 and mouse chromosome 17 E2. Genomics, *16:* 765–767, 1993.
6. Kuhen, K. L., Shen, X., and Samuel, C. E. Mechanism of interferon action: sequencing the human interferon-inducible RNA-dependent protein kinase (PKR) deduced from genomic clones. Gene, *178:* 191–193, 1996.

Received 11/4/97; accepted 5/15/98.
[1] The abbreviations used are: TK, transketolase; PKR, protein kinase, RNA dependent.

Reply

I have been in contact with Dr. Haines regarding the discussion of *p68* in our paper, which he referenced (1). I found his remarks appropriate and necessary to be published in *Cancer Research* as a letter (2). TK[1] was identified as *p68* in other studies; as a result, the literature search with the designation of molecular weight yielded results that did not indicate that these proteins are very different, as Dr. Haines pointed out in his letter (2). My mistake overlooking this obvious difference is hereby acknowledged. Because the sentence that Dr. Haines quotes from our article also identifies TK as the subject of our studies and discussion, I hope that the reader will realize readily that we quote Dr. Haines' work by mistake and that the linking of their protein kinase with our TK is clearly an error. I thank Dr. Haines for pointing out this important fact and certainly agree that a careful reading of the medical literature is advisable to avoid such errors in the future. I also thank Dr. Haines for his comments about the importance of our work and for emphasizing that the central role of TK in the tumor cell ribose synthesis process—which is the main focus of our paper—is not detracted by our mistake regarding TK and the *p68* family of proteins.

Laszlo G. Boros
Department of Surgery
College of Medicine
The Ohio State University
400 West 12th Ave., Wisemann Hall N217
Columbus, Ohio 43210

References

1. Boros, L. G., Puigjaner, J., Cascante, M., Lee, W-N. P., Brandes, J. L., Bassilian, S., Yusuf, F. I., Williams, R. D., Muscarella, P., Melvin, W. S., and Schirmer, W. J. Oxythiamine and dehydroepiandrosterone inhibit the nonoxidative synthesis of ribose and tumor cell proliferation. Cancer Res., *57:* 4242–4248, 1997.
2. Haines, G. K., III. Correspondence re: L. G. Boros *et al.*, Oxythiamine and dehydroepiandrosterone inhibit the nonoxidative synthesis of ribose and tumor cell proliferation. Cancer Res., *57:* 4242–4248, 1997. Cancer Res., *58:* 3188, 1998.

Received 4/28/98; accepted 5/15/98.
[1] The abbreviation used is: TK, transketolase.