FBrf0089302

Department of Genetics
University of Cambridge

From: Mrs. E.J. Whitfield
Email: [redacted]

DOWNING STREET
CAMBRIDGE
CB2 3EH
ENGLAND

Tel: [redacted]
Fax: [redacted]

23rd May, 1996

Dear Dr. Todo,

I am a curator of FlyBase working at the Cambridge, England, site with Prof. M. Ashburner.

In your science paper:
Todo et al., 1996, Science 272(5258): 109-112
you discuss DNA photolyase.

I have read the papers concerning photolyase (your group and others):
Boyd and Harris, 1985, Genetics 110(3/2): s85
Boyd and Harris, 1987, Genetics 116: 233--239
Todo and Ryo, 1992, Mutat. Res. 273: 85--93
Todo et al., 1993, Nature 361(6410): 371--374
Todo et al., 1994, Mutat. Res. 315(3): 213--228
Yasui et al., 1994, EMBO J. 13(24): 6142--6151
Hardin and Wensink, 1991, A. Conf. Dros. Res. 32: 50

and have two questions I would like to ask:

1) In FlyBase we have:
*a Phl
*e Photolyase
*x FBrf0079670 == Yasui et al., 1994, EMBO J. 13(24): 6142--6151
*x FBrf0059118 == Todo et al., 1993, Nature 361(6410): 371--374
and
*a phr
*e photorepair
*b 2-56.8 (between pr and c).
*c 43B--43C
*x FBrf0042736 == Boyd and Harris, 1985, Genetics 110(3/2): s85
*x FBrf0046353 == Boyd and Harris, 1987, Genetics 116: 233--239
*x FBrf0066905 == Lindsley and Zimm, 1992
*x FBrf0057313 == Todo and Ryo, 1992, Mutat. Res. 273: 85--93
*x FBrf0076976 == Todo et al., 1994, Mutat. Res. 315(3): 213--228
*x FBrf0066305 == Hardin and Wensink, 1991, A. Conf. Dros. Res. 32: 50

I found the sentence
'phr encodes the apoenzyme of DNA photolyase'
in Todo et al., 1994, Mutat. Res. 315(3): 213--228.
On the basis of this I should merge the above genes and use phr as the valid gene symbol. Do you agree?

2) The location of phr.
44C-44D from Todo et al., 1994, Mutat. Res. 315(3): 213--228
43B-43C from Hardin and Wensink, 1991, A. Conf. Dros. Res. 32: 50
39B-39C from Todo et al., 1996, Science 272(5258): 109-112

Could you please tell me which is correct?

Many thanks

Eleanor Whitfield.

Eleanor Whitfield
FlyBase

KYOTO UNIVERSITY

RADIATION BIOLOGY CENTER
YOSHIDA-KONOECHO, SAKYO-KU, KYOTO 606, JAPAN

FAX [redacted]

Mrs. E.J. Whitfield
Department of Genetics
University of Cambridge
Downing Street, Cambridge
CB2 3EH, England

Dear Mrs. Whitfield

March 30,1996

Thank you for your letter of May 23 (April 17). I am sorry for the delay in answering your queries.

You have two questions. First is to use phr as symbol of Drosophila photolyase gene is valid? Second is why three chromosomal locations are reported? Which is correct? Before answering your question, let me explain briefly about photolyase gene of Drosophila.
Drosophila have two types of photolyase. Substrate of each photolyase is different completely. Photolyase repairs UV induced DNA damage. UV irradiation of cell induce two type of damage in DNA; cyclobutane pyrimidine dimer (CPD) and (6-4)photoproduct. One type of photolyase repairs CPD specifically and another type of photolyase repairs (6-4)photoproduct specifically. For convenience' sake, here I call the two photolyase as CPD photolyase and (6-4)photolyase.

CPD photolyase appears in Fly Base as follows;
*e Photolyase
*x FBrf0079670==Yasui et al., 1994, EMBO J.13(24):6142--6151
*a phr
*e photorepair
*b 2-56.8(between pr and c).
*x FBrf0042736==Boyd and Harris, 1985, Genetics 110(3/2):s85
*x FBrf0046353==Boyd and Harris, 1987, Genetics 116:233--239
*x FBrf0066905==Lindsley and Zimm, 1992
*x FBrf0057313==Todo and Ryo, 1992, Mutat. Res.273:85--93
*x FBrf0076976==Todo et al., 1994, Mutat. Res. 315(3): 213--228
*x FBrf0066305==Hardin and Wensink, 1991, A. Conf. Dros. Res. 32:50

(6-4)photolyase appears in Fly Base and literature as follows;
*x FBrf0059118==Todo et al., 1993, Nature 361(6410):371--374
Todo et al., 1996, Science 272(5258): 109-112

I go back to your question.
(1) I agree to use phr as the valid gene symbol for CPD photolyase. But, I think for the (6-

KYOTO UNIVERSITY

RADIATION BIOLOGY CENTER
YOSHIDA-KONOECHO, SAKYO-KU, KYOTO 606, JAPAN

FAX [redacted]

4)photolyase other symbol might be needed. 6-4phr or phr6-4 and so on.
(2) Chromosomal location of CPD photolyase is44C-44D and that of (6-4)photolyase is 39B-39C. Concerning with the discrepancy between our report (Todo et al. Mutat Res. 1994) and Hardin and Wensink (1991), I have no idea why they decided the location as 43B-43C. I believe our result.

Sincerely Yours,

Takeshi Todo

Takeshi Todo, Ph.D.