Corrigenda and Errata

Due to a cumulative orthographic error in the original, the following corrections may be observed:

Ottolenghi, P., J.C. Ellory and R.A. Klein, The substructure of phosphodiesterase as established by radiation inactivation: A reinterpretation of results (1982) FEBS Letters 150, 311–313.

page 312, figure 1 legend, bottom line *should read*:
tion inactivated units.

instead of:
tion activated units.

page 312, section 2 *should read*:

2. PROBABILITY ARGUMENT

With regards to the dimer, in the irradiated state there are 4 possibilities:
(a) Unhit dimer;
(b) Dimer hit at least once on one subunit and not on the other;
(c) Dimer hit at least once on the other subunit; i.e., the same as (b) in reverse;
(d) Dimer hit at least once on each subunit.
After irradiation, the sum of the 4 probabilities must equal unity.

If k is an inactivation constant proportional to the molecular mass of a monomer:

$$p(\mathrm{a}) = \mathrm{e}^{-2kr}$$

$$p(\mathrm{b}) = \mathrm{e}^{-kr}(1 - \mathrm{e}^{-kr})$$

$$p(\mathrm{c}) = \mathrm{e}^{-kr}(1 - \mathrm{e}^{-kr})$$

$$p(\mathrm{d}) = (1 - \mathrm{e}^{-kr})(1 - \mathrm{e}^{-kr}) = 1 - 2\mathrm{e}^{-kr} + \mathrm{e}^{-2kr}$$

and

$$p(\mathrm{a}) + p(\mathrm{b}) + p(\mathrm{c}) + p(\mathrm{d}) = 1$$

(This would not hold if the '2' derived from the sum of p(b) and p(c) was not present)

Then, since the number of active monomers is the same as the number of radiation damaged dimers, we would multiply the sum of (b) and (c) by D_o (the number of dimers initially present) to obtain the phosphodiesterase activity. This produces our eq. (1).

instead of:

2. PROBABILITY ARGUMENT

In the irradiated state there are 4 possibilities:

(i) Unhit dimer;
(ii) Dimer hit at least once on one subunit and not on the other;
(iii) Dimer hit at least once on the other subunit; i.e., the same as (ii) in reverse;
(iv) Dimer hit at least once on each subunit.
After irradiation, the sum of the 4 probabilities must equal unity.

$$p(\mathrm{a}) = \mathrm{e}^{-k}D^r = \mathrm{e}^{-2k}M^r$$

$$p(\mathrm{b}) = \mathrm{e}^{-k}M^r(1 - \mathrm{e}^{-k}M^r)$$

$$p(\mathrm{c}) = \mathrm{e}^{-k}M^r(1 - \mathrm{e}^{-k}M^r) = 2\mathrm{e}^{-k}M^r - 2\mathrm{e}^{-2k}M^r$$

$$p(\mathrm{d}) = (1 - \mathrm{e}^{-k}M^r)(1 - \mathrm{e}^{-k}M^r) = 1 - 2\mathrm{e}^{-k}M^r + \mathrm{e}^{-2k}M^r$$

and

$$p(\mathrm{a}) + p(\mathrm{b}) + p(\mathrm{c}) + p(\mathrm{d}) = 1$$

(This would not hold if the '2' derived from the sum of p(b) and p(c) was not present)

Then, since M_r (the number of active monomers) is the same as the number of radiation damaged dimers, we would multiply the sum of (b) + (c) by D_o the number of dimers initially present, to obtain the phosphodiesterase activity. This produces our eq. (1).

page 312, table 1 *should read*:

Table 1

	Phosphodiesterase activity after		Fractional phosphodiesterase activity remaining after
	0 rads	r rads	r rads
1: Basal activity	$\propto M_o$	$\propto M_o e^{-kr} + 2D_o\left(1 - e^{-kr}\right)e^{-kr}$	$A_r/A_o = (1 + 2\frac{D_o}{M_o})e^{-kr} - 2\frac{D_o}{M_o}e^{-2kr}$
2: Calmodulin-dependent activity	$\propto 2D_o$	$\propto 2D_o e^{-2kr}$	$\frac{A_r^{cal}}{A_o^{cal}} = e^{-2^{kr}}$
3: Total activity	$\propto M_o + 2D_o$	$\propto (M_o + 2D_o)e^{-kr}$	$\frac{A_r^{total}}{A_o^{total}} = e^{-kr}$

M_o and D_o = monomer and dimer concentrations before irradiation
k = an inactivation constant proportional to the radiation target size (i.e., monomer molecular mass)
A, A^{cal}, A^{total} = basal, calmodulin-dependent and total enzyme activities; the subscripts o and r refer to activities of the enzyme before and after irradiation with a dose of r rads

instead of:

Table 1

	Phosphodiesterase activity after		Fractional phosphodiesterase activity remaining after
	0 rads	r rads	r rads
1: Basal activity	$\propto M^o$	$\propto M^o e^{-kr} + 2D^o\left(1 - e^{-kr}\right)e^{-kr}$	$A^r/A^o = (1 + 2\frac{D^o}{M^o})e^{-kr} - 2\frac{D^o}{M^o}e^{-2kr}$
2: Calmodulin-dependent activity	$\propto 2D^o$	$\propto 2D^o e^{-2kr}$	$\frac{A_r^{cal}}{A_o^{cal}} = e^{-2^{kr}}$
3: Total activity	$\propto M^o + 2D^o$	$\propto (M^o + 2D^o)e^{-kr}$	$\frac{A_r^{total}}{A_o^{total}} = e^{-kr}$

M^o and D^o = monomer and dimer concentrations before irradiation
M^r and D^r = monomer and dimer concentration after irradiation with r rads
k = an inactivation constant proportional to the radiation target size (i.e., monomer molecular mass)
A, A^{cal}, A^{total} = basal, calmodulin-dependent and total enzyme activities; the subscripts o and r refer to activities of the enzyme before and after irradiation with a dose of r rads