ADDENDUM

NAME OF THE CANDIDATE : SAUMITRA PAL.

TITLE OF THE THESIS : TUMOR ASSOCIATED ANTIGENS IN FEMALE AND MALE BREAST CANCERS.

NAME OF THE SUPERVISOR : DR. UTPALA CHATTOPADHYAY

SUBJECT : PHYSIOLOGY.

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ADDENDUM

The following paragraphs/points should be read as insertions in pages as indicated below:

a) In Page 6, at the end of last paragraph:

In recent years several reports (283-285) have implicated 'heregulin' as the ligand for erb B-2. Altiok et al (283) showed that erb B-2 mediate the effect of heregulin on acetylcholine receptor gene expression. According to Chan et al (284), heregulin activation of extracellular acidification in mammary carcinoma cells is associated with expression of HER 2.

b) In Page 9, at the end of first paragraph:

Champeme et al (286) reported '.llq13'. amplification in local recurrence of human primary breast cancer. They demonstrated expression of int-2 by RT-PCR in metastasis.

c) In Page 15 the 'Morphology of MuMTV' should be described as follows:

The morphology of the MuMTV virion has been studied in detail. Its size and shape depend on the conditions and methods of measurement. In its natural environment, it is believed to be spherical with diameters ranging from approximately 50 to 140 nm (89). The virion contains a nucleoid, usually eccentrically located, about 40 nm in diameter, surrounded by a shell. Negatively stained (phosphotungstestate) virions usually have head and tail forms.

The MuMTV virion can be disrupted by Tween 80-ether treatment with the release of three structural components: nucleoids, large fragments of membranes and small pieces of membrane that tend to form rosettes (90). The intact virions contain about 1.9% RNA on a dry weight basis, compared with 4.4% for the isolated nucleoids. Isolated nucleoids after Tween-80-ether treatment sometimes reveal the nucleocapsid as a coiled ropelike structure consisting of strands. Two distinctive nucleocapsid structures have been seen (90-92): (i) single
strands 30–50 Å in diameter and (ii) paired strands 79 to 90 Å in diameter; the paired strands are often connected by periodic bridges 63 Å apart or the two strands are twisted around each other to make a double helix.

The outer coat of the MuMTV virion has somewhat the same appearance as the outer coat of the myxoviruses (94, 287). The surface of the outer membranes of both MuMTV and myxoviruses is covered with projections or spikes, but the spikes of MuMTV have knobs at their distal ends and are longer than those of the myxoviruses (94, 95). The membrane seems to have a reticular structure composed mainly of hexagons, but with a few pentagons and the spikes are arranged in a regular pattern corresponding to the reticulum.

The virion membrane itself appears as a typical bilaminar structure, although in some micrographs it appears that the inner lamina is less densely stained than the outer. Sarkar and Moore (287) have suggested that the spikes are anchored to a hexagonal lattice within the membrane.

d) In Page 18, at the end of second paragraph:

Lloyd et al (288) reported the presence of gp52 related antigenicity in 89% of the human male breast carcinomas, while a lesser proportion of tumors among female patients (28%) were positive.

e) In Page 18, at the end of the line '..... which was found by hybridization technique (169)' within the first paragraph:

Keydar et al (152, 289) reported that the clonal derivatives of the T47D human breast carcinoma cell line release particles that have the biochemical characteristics of a retrovirus. According to Beriashvili et al (290), there is a hormone-dependent expression of oncovirus genomes in stable mouse mammary cancer cell lines GR and RIII. Lasfargues et al (291) showed that a human breast tumor cell line BT-474, derived from an invasive ductal carcinoma supports the MuMTV replication.

f) The description of the reference 156 which refers to DF₃ protein, has been included within the list (Table-4, number-h) in page 32, instead of page 24.
g) In Page 130, at the end of the first paragraph (within discussion):

Hareuveni and Lathe (292) reported that the breast cancer sequences identified by MuMTV antiserum are unrelated to MuMTV.

h) In Page 10, at the end of first paragraph:

1.4.9 BCRA 1 and 2

In recent years there are reports (293-295) on BCRA 1 and 2, the susceptibility genes for familial breast cancers. BCRA 1 has been found to be localized to the long arm of chromosome 17.

i) In Page 129, at the end of third paragraph (within discussion):

It has been found that the human breast tumor cells are susceptible to the MuMTV and can eventually support its replication (291). The virus that replicated in the human cells was characterized as a mouse virus by the presence of a specific RNA-directed DNA polymerase.

j) In Page 136, at the end of second paragraph (within discussion):

The finding of a greater homology of MuMTV-related human DNA to MuMTV gag-pol sequences than with env sequences (248,281) would also be consistent with predominant serological responses to viral core antigens as compared to envelop glycoproteins.

k) In Page 157, after the reference 282:


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