

# CONFIDENTIAL

Minutes of the Newark Campus Initial Inquiry Committee  
Meeting of June 7, 2001, 12:00 pm - 3:00 pm

**PRESENT:** Dr. Neil Cherniack, Dr. Daniel Fine, Dr. Anthony Forrester, and Dr. Elizabeth Raveché (Chair); Ms. Julie Kligerman, Office of Legal Management (by phone for part of the meeting); and Office of Academic Affairs confidential staff: Dr. Karen Putterman, Vice President for Academic Affairs; Dr. Sheila Eder, Director of Institutional Research

**ABSENT:** Ms. Teresa Marsico

Dr. Raveché presided.

The Committee met to consider additional comments from Dr. Hill (attachment 22) concerning experiments performed by her and Dr. Bishayee in September/October 1999 on V79 HPRT mutants conducted under the "Banbury protocol" as published in Mammalian Cell Mutagenesis, Banbury Report No. 28, M.M. Moore et al., editors, 1987. Dr. Raveché said she had discussed Dr. Hill's comments with her at length prior to this Committee meeting of June 7, 2001, and was familiar with the experiments, the techniques involved, Dr. Hill's analysis of Dr. Bishayee's data, and Dr. Hill's conclusions from her analysis. Dr. Raveché explained all of this to the Committee, using Dr. Bishayee's original handwritten lab notebook data (attachment 21 to the Committee minutes of April 27, 2001), and Dr. Hill's analysis and graphing of these data in Excel (attachment 22).

Dr. Raveché explained that there are two arms to these experiments, a survival arm followed by a mutagenesis arm. On May 22, 2001, Dr. Hill met with Dr. Raveché and reported that on September 6, 1999, Dr. Bishayee began one such experiment jointly with Dr. Hill, with Dr. Bishayee performing the survival part and Dr. Hill the mutagenesis part. Dr. Hill went on to say that on September 20, 1999, Dr. Bishayee initiated another one of these experiments, this time doing both parts himself. Dr. Hill told Dr. Raveché she reviewed Dr. Bishayee's survival data, including the Coulter cell counts of September 24 and 27, and October 1 and 4, and graphed his survival and mutagenicity results. Dr. Hill said she believes that the Coulter counts after irradiation do not show the expected difference between the controls and the irradiated cells, i.e., the irradiated cells should be

expected to have lower counts than the controls due to cell death or damage from the irradiation making it impossible for the cells to divide normally. Dr. Hill showed Dr. Raveché her own data from the same protocol she had carried out on September 6, 1999 which she said do show this difference (attachment 22). Dr. Hill concluded that, with these Coulter readings three days after irradiation, Dr. Bishayee could not have gotten the experimental results he did, which appear to be valid and as predicted for this experiment.

The Committee noted that during Dr. Hill's interview with the Committee on April 17, 2001, she had brought to the Committee's attention her concerns about the mutagenicity part of the "Banbury protocol" experiment begun by Dr. Bishayee on September 24, 1999. During that interview, Dr. Hill had explained that on October 11, 1999, following ten days of incubation, the plated cells were ready to be fixed and stained and the colonies counted. Dr. Hill said Dr. Bishayee told her he was going to stain the plates on October 11. The next day, October 12, 1999, Dr. Hill said she became suspicious when she found a set of dishes of the number and type that would be used under this protocol still in the incubator. She said she examined the plates under a microscope, and found no colonies or even dead cells which she said would be expected in this type of experiment. Dr. Hill reported that she had questioned Dr. Bishayee about these dishes she found in the incubator on October 13, and he had told her they were for a different experiment. However according to Dr. Hill, the P.I., Dr. Howell, later told Dr. Hill that there was no other experiment going on in the lab at that time that used this kind of dish. Dr. Hill also said that on October 14, the day after she questioned Dr. Bishayee about the dishes and what experiment they were for, the dishes disappeared from the lab and she could not find them in the trash. Dr. Hill concluded from these occurrences that Dr. Bishayee had fabricated the mutation data from this experiment, or that he may have plagiarized the experimental results from the Banbury publication that had disappeared from the laboratory. The Committee further noted that a copy of this publication was obtained from the library following Dr. Hill's interview with the Committee on April 17, 2001 and shown to Dr. Hill. Dr. Hill reviewed it in Dr. Eder's presence and stated she could not find any data that Dr. Bishayee had plagiarized.

At today's meeting, the Committee then reviewed the steps in the protocol that was followed by Drs. Hill and Bishayee in September/October 1999 and the specific techniques involved. They noted that high variability in counting cells using Coulter methodology is the norm, and that Coulter counts can be thrown off by technical flaws such as failure to adequately disperse the cells, the presence of bubbles, etc. The Committee also noted the fact that the Coulter counts are not integral to the experiment in question, but are incidental data not analyzed or used in the results; they are used only as a guide to determine how to dilute the cells to get the correct number of cells for the next step and to determine when the cells had undergone a total of ten divisions. The Committee did agree, however, that the pattern of Coulter counts in Dr. Bishayee's experiment showed inconsistent effects of irradiation compared to the non-irradiated controls. The Committee considered consulting an expert in the "Banbury protocol" to ascertain whether such a Coulter count pattern on day three following irradiation could be consistent with a successful running of the protocol with results such as those reported by Dr. Bishayee. But first, the Committee called Dr. Bishayee and asked that he come across the street from the medical school to speak with them.

Dr. Bishayee agreed and was interviewed by the Committee the same day. He was given his original notebook containing the records of the experiment under discussion (attachment 21 from the minutes of the April 27, 2001 Committee meeting) in order to refresh his recollection of this experiment of 1½ years ago. Dr. Bishayee explained that plating for survival is done on day zero of exposure (irradiation) and the plates are read seven days later. In this running of the experiment, Dr. Bishayee stated that September 24 was day zero (day of irradiation). Dr. Bishayee confirmed this by pointing to his records in his notebook. Therefore the Coulter counts on September 24 would not be expected to show any significant difference between controls and irradiated tubes. Dr. Bishayee reviewed with the Committee the Coulter counts for September 27, the actual day three, at which time such differences would be expected. He and the Committee noted that except for tubes five and ten whose counts appear too high for the highest radiation-dose tubes, the expected difference in counts was in fact observed (tubes three and four had lower counts than tubes one and two, and tubes eight and nine lower than tubes six and

seven). The Committee agreed with Dr. Bishayee that the counts in tubes five and ten, although not fitting the expected pattern, were within experimental error. In addition, Dr. Bishayee explained to the Committee why even on day three one might not necessarily see survival effects of irradiation (because, for example, cell death or damage might not occur right away but be delayed and appear later in an exponential fashion). Survival effects are known to occur for sure by day seven which is why the plates prepared on day zero are read seven days later for survival.

The Committee was satisfied with Dr. Bishayee's explanation of the experiment and the data he recorded, and decided consultation with an expert was not needed.

The Committee reconfirmed its conclusion of May 9, 2001 that there was insufficient credible evidence brought forward by Dr. Hill of misconduct in science by Dr. Bishayee in these experiments of September/October 1999 to warrant further investigation.

The meeting was adjourned.