NEW HAVEN
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CLINICAL RESEARCH UNIT

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September 20, 2006

J-6

Mr. Dennis Lawyer
Division of Nuclear Material safety
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Re: Amend License No. 06-30933-02 03036825
(Mail Control Number 139328)

Dear Mr. Lawyer,

I am currently the Site Head and Medical Director of Pfizer New Haven Clinical Research Unit. I am writing to request an amendment to our radioactive materials license (No. 06-30933-02). Our current Radiation Safety Officer (RSO), Dr. Irina Kaplan, will be transferring to a different department at Pfizer so I would like to appoint Dr. Subhashis Banerjee as our new RSO.

I have attached Dr. Banerjee's qualifications for your review. Dr. Banerjee has over 20 years of experience in the use of the radioisotopes and techniques authorized by our current license. I believe that he fully meets the requirements to become a RSO under 10 CFR 35.50(b).

If you have any questions or require any additional information, please do not hesitate to contact me.

Sincerely,

Howard Uderman

Dr. Howard Uderman
Medical Director
Site Head, Pfizer Clinical Research Unit

Enclosures

139328
NMSS/RGN1 MATERIALS-002

www.NewHavenCRU.com

One Howe Street New Haven, Connecticut 06511 203.401.0100 fax: 203.401.0200 toll-fre 800.254.6398

CERTIFICATE OF ACHIEVEMENT

This is to Certify that

SUBHASHIS BANERJEE

Has Completed 40 Hours of

Radiation Safety Officer Training

September 11 -15, 2006

Radiation Safety Associates, Inc.

K. Paul Steinmeyer, RRPT
Radiation Safety Associates, Inc.

COURSE OBJECTIVES AND DETAILED OUTLINE

In a congenial, non-threatening learning environment:

1. Obtain enough theoretical knowledge about mathematics, radiation and radioactivity to be an effective RSO.
2. Practice the basic skills required to be possessed by the RSO.
3. Become familiar with using the regulations and license requirements to solve problems and make decisions.

Hands-On Experiences

One to two hours per day will be devoted to hands-on activities: laboratory measurements and problems, performing contamination and radiation surveys, performing sealed source leak tests, documenting surveys, reviewing dosimetry results, reviewing instrument calibration reports, etc.

Successful Completion

No written exam is required for the successful completion of this course, but 100% attendance and participation is expected. A take-home exam is available for those who need or want a grade.

Day 1

Welcome, course administration, introductions	0.5 h
Chapter 1. The RSO and the Regulatory Structure	0.5 h
Chapter 2. The Atom	0.5 h
Chapter 3. Radiation, Radioactivity and Decay	2 h
Chapter 4. Units of Measure	1 h
Chapter 5. Radiation Interactions with Matter	1 h
Chapter 6. Background Radiation	1 h

LAB EXERCISES, DEMONSTRATIONS, PROBLEMS 1.5 h

Lab 1. Mass-to-Energy Conversion and Binding Energy Calculation.
Lab 2. The Nature and Attributes of Alpha, Beta and Gamma Radiation
Lab 3. Radioactive Decay Problems
Lab 4. Inverse Square Calculations and Measurements
Lab 5. Gamma Constants and Exposure Rate
Lab 6. Unit Conversion
Lab 7. Determine Detector Efficiency

Day 2

Chapter 7. Applications of Radiation Technology	0.5 h
Chapter 8. Biological Effects	1 h
Chapter 9. Personal Dosimetry	2 h
Chapter 10. Radiation Detection and Measurement	2 h

LAB EXERCISES, DEMONSTRATIONS, PROBLEMS 2.5 h

Lab 8. Predict Neutron Activation Products and Decay Schemes
Lab 9. *Bremsstrahlung*
Lab 10. Energy From Nuclear Fission
Lab 11. Background Radiation Measurements

Day 3

Chapter 11. External Exposure Control and Surveys	1 h
Chapter 12. Distance and Shielding	2 h
Regulations and Guides	3 h
LAB EXERCISES, DEMONSTRATIONS, PROBLEMS	2 h
Lab 12: Perform and Document an External Exposure Rate Survey	
Lab 13: The Effect of Source-to-Detector Distance on Counting Efficiency	
Lab 14: Calculating Required Lead Shielding Thickness	
Lab 15: Radiation Dose Rate Determination Using Distance and Shielding	

Day 4

Chapter 13. Contamination Control	1 h
Chapter 14. Counting Radioactive Samples and Statistics	1.5 h
Chapter 15. Air Sampling and Evaluation	1.5 h
Chapter 16. Internal Exposure Control and Dose Assessment	2 h
LAB EXERCISES, DEMONSTRATIONS, PROBLEMS	2 h
Lab 16: Perform and Document a Contamination Survey	
Lab 17: Perform and Document a Sealed-Source Leak Test	
Lab 18: Proving the Quality of a Nuclear Counting Program Using Counting Statistics	
Lab 19: Perform and Document an Airborne Contamination Survey	
Lab 20: Calculate TEDE From an Ingestion Incident	

Day 5

Chapter 17. Radioactive Material Receipt, Handling, Control and Disposal	1.5 h
Chapter 18. Packaging and Shipping Radioactive Material	0.5 h
Chapter 19. License Requirements and the Radiation Protection Program	2 h
Chapter 20 Emergency Planning	1 h
Chapter 21 Audits	1 h
Chapter 22 Decommissioning	1 h
LAB EXERCISES, DEMONSTRATIONS, PROBLEMS	1 h
Lab 21: Receiving a Labeled Package of Radioactive Material	
Lab 22: Package a Radioactive Source for Shipment	
Lab 23: License Requirements	
Lab 24: Emergency Planning	
Lab 25: Develop an Audit Checklist	
Lab 26: Regulatory Research Questions	

Résumé of

K. PAUL STEINMEYER

EDUCATION AND TRAINING

U.S. Naval Nuclear Power School and Prototype Training
U.S. Naval Submarine School
Various Navy Courses in Electronics and Instrumentation
Bachelor of Arts (Honors), University of Connecticut
Radiological Controls, Naval Reactor Prototype, Windsor, Connecticut
Radiation Protection Surveys, University of Michigan
Radiation Protection Technology--Phase I, Northeast Utilities, Berlin, Connecticut
Radiation Protection Technology--Phase II, Northeast Utilities, Berlin, Connecticut
Various University Courses in Mathematics, Statistics, Metallurgy, Radiochemistry
Factory-Authorized Service Training on SCBA Regulators, Mine Safety Appliances Company, Pittsburgh, Pennsylvania
Factory-Authorized Service Training on SCBA Regulators, Scott Aviation, Lancaster, New York
Environmental Monitoring for Radioactivity, Oak Ridge Associated Universities

EXPERIENCE

1981 to Present

Radiation Safety Associates, Inc., Hebron, Connecticut.

Health Physicist, President. Provide consulting, training and technical services in health and safety matters on a nationwide basis to the nuclear industry, general industry, academic institutions, and local, state and the federal government. Special emphasis is given to the areas of respiratory protection, radiation safety, decontamination and health physics. Currently under contract to the U.S. Nuclear Regulatory Commission to assist in the development of new regulations and supporting documents. Radiation Safety Officer for an NRC- and state-licensed radio-analytical and instrument calibration laboratory. Editor of *Radiation Protection Management*, the Journal of Applied Health Physics, and of *RSO Magazine*. Appeared as expert witness in respiratory protection cases. He has worked as a consultant to the United Nations Development Programme (UNDP), representing the UN at a meeting of the International Atomic Energy Agency (IAEA) in Vienna. He has been a UN inspection team leader during inspections of nuclear technology transfer programs in Beijing and Shanghai, China; in Hanoi, Ho Chi Minh City and Dalat, Vietnam; in Kuala Lumpur, Malaysia; and in Dhaka, Bangladesh.

1993 to Present

RSA Laboratories, Hebron, Connecticut.

Radiation Safety Officer

RSA Laboratories, a division of Radiation Safety Associates, Inc., maintains a state-of-the-art radioanalytical laboratory. Services available include performing virtually every type of radioanalysis in existence, and a complete wet-chemistry lab for accomplishing required separations prior to radioanalysis. Sealed source leak test analysis, portable count-rate and exposure-rate radiation detector calibration, and air sampler calibration are also provided. RSA Laboratories is licensed by the NRC (License #06-30007-01) to perform sample analysis and instrument calibrations, and by the State of Connecticut as a Public Health Laboratory (#PH-0111).

Subhashis Banerjee, MD
Research Physician
Pfizer New Haven CRU, 1 Howe Street, New Haven, CT 06511
Phone: (203) 401-0231; E-mail: subhashis.banerjee@pfizer.com

PROFESSIONAL SUMMARY

Trained in internal medicine, rheumatology, immunology, and clinical investigation. Over 20 years' experience in basic research and early clinical development. Used radioactivity in immunological and molecular biological techniques *in vitro* and in an ADME study in human volunteers *in vivo*. Trained in shipping & receiving byproduct materials, performing radiation surveys, radiation instrumentation and dosimetry, controlling safe use of byproduct material, using procedures to minimize contamination, decontamination methods, emergency procedures during use of radioactive materials, and safe disposal of byproduct materials. Board certified in Internal Medicine [American Board of Internal Medicine (ABIM)]. Licensed to practice medicine in Connecticut.

PROFESSIONAL EXPERIENCE

- **4/05-present** Research Physician, Pfizer New Haven CRU, New Haven, CT. Principal investigator on multiple Phase I clinical trials, including an ADME study using a ^{14}C-radiolabeled compound.
- **5/04-3/05** Assistant Professor of Medicine, UMassMemorial Medical Center, and Fallon Clinic internist, Worcester, MA
- **1993-2001** Senior Principal Scientist and Group Leader, Abbott Bioresearch Center, Worcester, MA. Used radioactivity in lymphocyte proliferation and cytotoxicity assays, radioimmunoassays, and DNA/protein electrophoresis and blotting methods *in vitro*.
- **1988-1993** Senior Research Fellow, Shriners Hospital, Montreal, Canada. Used radioactivity in lymphocyte proliferation and cytotoxicity assays *in vitro*.
- **1985-1988** Research Fellow, Dept. of Immunology, Mayo Clinic, Rochester, MN. Radioactivity experience as at Abbott.

EDUCATION

Training/Fellowship	Years	Institution
Residency in Internal Medicine	2002-2004	Saint Vincent Hospital, Worcester, MA
Immunology Fellowship	1985-1988	Mayo Clinic, Rochester, MN
Rheumatology Fellowship	1982-1985	All-India Institute of Medical Sciences, New Delhi, India
Residency in Internal Medicine (MD)	1979-1982	Christian Medical College Hospital, Vellore, India
Medical School (MBBS)	1972-1978	Christian Medical College, Vellore, India

AWARDS

- 1989 - Edward C. Kendall Research Award, Mayo Clinic, Rochester, MN
- 1988 - Fred McDuffie Research Award, Arthritis Foundation
- 1979-1982 - Fellowship Award of the Indian Council of Medical Research (ICMR), New Delhi, India

MEMBERSHIPS

- American College of Physicians
- American College of Rheumatology
- American Association of Immunologists

JOURNALS REVIEWED

- Journal of Immunology
- Arthritis and Rheumatism
- Journal of Rheumatology
- Clinical and Experimental Rheumatology
- Journal of Pharmacology and Experimental Therapeutics

PATENTS ISSUED

1. J.G. Salfeld, M. Roguska, M. Paskind, S. Banerjee, D. Tracey, M. White, Z. Kaymakcalan, B. Labkovsky, P. Sakorafas, G.M. Veldman., A. Venturini, A. Widom, S. Friedrich, N.W. Warne, A. Myles, J.G. Elvin, A.R. Duncan, E.J. Derbyshire, S. Carmen, T.L. Holtet , S.L. Du Fou , and S. Smith.
   Human antibodies that bind human IL-12 and methods for producing.
   U.S. Patent No. 6,914,128. Issued – July 5, 2005
2. T. Seshadri, P. Li, H. Allen, S. Banerjee, and M. Paskind.
   Transgenic knockout mouse having functionally disrupted interleukin-1β converting enzyme gene.
   U.S. Patent No. 6,100,445. Issued – August 8, 2000.
3. L. Sekut, A. Carter, T. Ghayur, S. Banerjee, and D.E. Tracey.
   Methods and compositions for modulating responsiveness to corticosteroids.
   U.S. Patent No. 6,054,487. Issued - April 25, 2000.
4. T. Barlozzari, S. Banerjee, and Andreas Haupt.
   Methods and compositions for treating rheumatoid arthritis.
   U.S. Patent No. 6,015,790. Issued - January 18, 2000.
5. H. J. Allen, S. Banerjee, K. D. Brady, J. C. Hodges, C. R. Kostlan, and R. V. Talanian.
   N-substituted glutamic acid derivatives with interleukin-1β converting enzyme inhibitory activity.
   U.S. Patent No. 5,932,549. Issued - August 3, 1999.
6. H. J. Allen, S. Banerjee, K. D. Brady, J. C. Hodges, C. R. Kostlan, and R. V. Talanian.
   N-substituted glutamic acid derivatives with interleukin-1β converting enzyme inhibitory activity.
   U.S. Patent No. 5,744,451. Issued - April 28, 1998.

PATENTS PUBLISHED

1. S. Banerjee, L.K. Taylor, C.E. Spiegler, D.E. Tracey, E.K. Chartash, R.S. Hoffman, W.T. Barchuk, P. Yan, A. Murtaza,, J.G. Salfeld, and S. Fischkoff.
   Treatment of TNFα related disorders.
   WO 2004/009776. International Publication Date 1 July 2004.
2. S. Banerjee.
   Methods for detecting deantigenized T cell epitopes and uses thereof.
   WO 2004/009109. International Publication Date 29 January 2004.

PUBLICATIONS

1. Banerjee, S., Nason, F.G., and Yood, R.A. (2004) Isolated vasculitis of the cervix presenting as vaginal discharge. *J Clin Rheumatol* 10: 89-91.
2. Waegell, W., Babineau, M., Hart, M., Dixon, K., McRae, B., Wallace, C., Leach, M., Ratnofsky, S., Belanger, A., Hirst, G., Rossini, A., Appel, M., Mordes, J., Greiner, D., and Banerjee, S. (2002). A420983, a novel, small molecule inhibitor of LCK prevents allograft rejection. *Transplant Proc.* 34: 1411-1417.
3. Spencer, D.M., , Veldman, G.M., Banerjee, S. Willis, J, and Levine, A.D. (2002) Distinct inflammatory mechanisms mediate early versus late colitis in mice. *Gastroenterology* 122: 94-105.
4. Sansonetti, P.J., Phalipon, A., Arondel, J., Thirumalai, K., Banerjee, S., Takeda, K., and Zychlinsky, A. (2000) Caspase-1 activation of IL-1β and IL-18 are essential for *Shigella flexneri*-induced inflammation. *Immunity* 12: 581-590.
5. Recklies, A.D., Poole, A.R., Banerjee, S., Bogoch, E., DiBattista, J., Evans, C.H., Firestein, G.S., Frank, C.B., Karp, D.R., Mort, J.S., Oppenheimer-Marks, N., Varga, J., van den Berg, W., and Zhang Y. (2000) Pathophysiologic aspects of inflammation in diarthrodial joints. In: *Orthopaedic Basic Science. Biology and Biomechanics of the Musculoskeletal System.* 2nd Ed. Edited by Buckwalter, J.A., Einhorn, T.A., and Simon, S.R. Published by American Academy of Orthopaedic Surgeons. pp. 489-530.
6. Ghayur, T. and Banerjee, S. (1999) Cytokines in T cell maturation. *Annu. Rep. Med. Chem.* 34: 219-226.
7. Hilbi, H., Moss, J.E., Hersh, D., Chen, Y., Arondel, J., Banerjee, S., Flavell, R.A., Yuan, J., Sansonetti, P.J., and Zychlinsky, A. (1998) Shigella-induced apoptosis is dependent on caspase-1 which binds to IpaB. *J. Biol. Chem.* 273:32895-32900.

8. Banerjee, S., Waegell, W., Veldman, T., Wysocka, M., Trinchieri, G., Salfeld, J., and Tracey, D. (1998) Anti-IL-12 MAb suppresses memory Th1 responses and is active in animal models of autoimmunity. *Arthritis Rheum.* 41: S38.
9. Banerjee, S. (1998) Role of caspase-1 (ICE) in inflammation and apoptosis. Proceedings of Keystone Symposium on "*Pathogenesis of Rheumatoid Arthritis: Implications for Future Therapy*", Tamarron, CO, January 23-29, 1998. p. 20
10. Guerassimov, G., Zhang, Y., Banerjee, S., Cartman, A., Webber,C., Esdaile, J., Fitzcharles, M.A., and Poole, A.R. (1998) Autoimmunity to cartilage link protein in patients with rheumatoid arthritis and ankylosing spondylitis. *J. Rheumatol.* 25:1480-1484.
11. Guerassimov, A., Zhang, Y., Banerjee, S., Cartman, A., Leroux, J.Y., Rosenberg, L.C., Esdaile, J., Fitzcharles, M.A., and Poole, A.R. (1998) Cellular immunity to the G1 domain of cartilage proteoglycan aggrecan is enhanced in patients with rheumatoid arthritis but only after removal of keratan sulfate. *Arthritis Rheum.* 41:1019-1025.
12. Ghayur, T., Banerjee, S., Hugunin, M., Butler, D., Herzog, L., Carter, A., Quintal, L., Sekut, L., Talanian, R., Paskind,M., Wong,W., Kamen, R, Tracey, D., and Allen, H. (1997) Caspase-1 processes IFN-γ-inducing factor and regulates LPS-induced IFN-γ production. *Nature* 386:619-623.
13. Li, P., Allen, H., Banerjee, S., and Seshadri, T. (1997) Characterization of mice deficient in interleukin-1 beta converting enzyme. *J. Cell. Biochem.* 64:27-32.
14. Guerassimov, A., Duffy, C., Zhang, Y., Banerjee, S., Leroux, J.Y., Reimann,A., Webber, C., Delaunay, N., Vipparti, V., Ronbeck, L., Cartman,A., Arsenault, L., Rosenberg, L.C., and Poole, A.R. (1997) Immunity to cartilage link protein in patients with juvenile rheumatoid arthritis. *J. Rheumatol.* 24:959-964.
15. Leroux, J.Y., Guerassimov, A., Cartman, A., Delaunay, N., Webber, C., Rosenberg, L.C., Banerjee, S., and Poole, A.R. (1996) Immunity to the G1 globular domain of the cartilage proteoglycan aggrecan can induce inflammatory erosive polyarthritis and spondylitis in BALB/c mice but immunity to G1 is inhibited by covalently bound keratan sulfate *in vitro* and *in vivo*. *J. Clin. Invest.* 97: 621-632.
16. Banerjee, S. (1996) Inflammation and Apoptosis in ICE-Deficient Mice. In: *Therapeutic Applications of Cytokines: Control of Inflammation, Growth and Differentiation.* Ed. Schlegel, J. IBC Medical Library Series, MA. pp. 3.1.1-3.1.27.
17. Li, P., Allen, H., Banerjee, S., Franklin, S., Herzog,L., Johnston, C., McDowell, J., Paskind, M., Rodman,L., Salfeld, J., Towne, E., Tracey, D., Wardwell, S., Wei, F, Wong, W., Kamen, R., and Seshadri, T. (1995) Mice deficient in IL-1β-converting enzyme are defective in production of mature IL-1β and resistant to endotoxic shock. *Cell* 80:401-411.
18. Haqqi, T.M., Qu, X.M., Sy, M.S., and Banerjee, S. (1995) Restricted expression of T cell receptor V beta and lymphokine genes in arthritic joints of a TCR V beta (H-2q) mouse strain-BUB/BnJ-with collagen-induced arthritis. *Autoimmunity* 20:163-170.
19. Ortman, R.A., Holderbaum, D., Qu, X.M., Banerjee, S., and Haqqi, T.M. (1994) BUB/BnJ (H-2q) is a TCR deletion mutant mouse strain (TCR V beta a, KJ16-) that is susceptible to type II collagen-induced arthritis. *J. Immunol.* 152: 4175-4182.
20. Banerjee , S., Webber, C., and Poole, A.R. (1992) The induction of arthritis in mice by the cartilage proteoglycan aggrecan: roles of $CD4^+$ and $CD8^+$ T cells. *Cell. Immunol.* 144:347-357.
21. Gu, W.Z, Banerjee, S.., Rauch, J., and Brandwein, S.R. (1992) Suppression of renal disease and arthritis and prolongation of survival in MRL-lpr mice treated with an extract of Tripterygium wilfordii Hook f. *Arthritis Rheum.* 35:1381-1386.
22. Gu, W.Z, Brandwein, S., and Banerjee, S. (1992) Inhibition of type II collagen-induced arthritis in mice by an immunosuppressive extract of Tripterygium wilfordii Hook f. *J. Rheumatol.* 19:682-688.
23. Banerjee, S., and Poole, A.R. (1992) Immunity to cartilage proteoglycans. *J. Rheumatol.* 19 (Supplement 33): 36-39.
24. Leroux, J.Y., Poole, A.R., Webber, C., Vipparti, V., Choi, H.U., Rosenberg, L.C., and Banerjee, S. (1992) Characterization of proteoglycan-reactive T cell lines and hybridomas from mice with proteoglycan-induced arthritis. *J. Immunol.* 148: 2090-2096.
25. Haqqi, T.M., Anderson, G.D., Banerjee, S., and David, C.S. (1992) Restricted heterogeneity in T-cell antigen receptor Vβ gene usage in the lymph nodes and arthritic joints of mice. *Proc. Natl. Acad. Sci. USA*, 89: 1253-1255.
26. Anderson, G.D., Banerjee, S., Luthra, H.S., and David, C.S. (1991) Role of *Mls-1* locus and clonal deletion of T cells in susceptibility to collagen-induced arthritis in mice. *J. Immunol.*, 147:1189-1193.
27. Banerjee, S., and David, C.S. (1991) Immunogenetics of type II collagen-induced arthritis in mice. In: *The Immunogenetics of Autoimmune Diseases,* Vol. II, edited by N.R. Farid, CRC Press, Inc., Boca Raton, FL, pp. 119-134.
28. Wooley, P., and Banerjee, S. (1991) Immunotherapy of collagen-induced arthritis with anti-Ia and anti-IL-2R antibodies. In: *Monoclonal Antibodies, Cytokines and Arthritis: Mediators of Inflammation and Therapy,* edited by T.F. Kresina, Marcel Dekker, In., New York, NY, pp.269-287.
29. Anderson, G.D., Banerjee, S., and David, C.S. (1989) MHC Class Aα and Eα molecules determine the clonal deletion of $V\beta6^+$ T cells: studies with recombinant and transgenic mice. *J. Immunol.*, 143: 3757-3761.
30. Banerjee, S., Anderson, G.D., Luthra, H.S., and David, C.S. (1989) Influence of complement C5 and Vβ T cell receptor mutations on susceptibility to collagen-induced arthritis in mice. *J. Immunol.*, 142:2237-2243.

31. Haqqi, T.M., Banerjee, S., Anderson, G.D., and David, C.S. (1989) RIII S/J (H-2^r). An inbred mouse strain with a massive deletion of T cell receptor Vβ genes. *J. Exp. Med.*, 169:1903-1909.
32. **Editorial**. David, C.S., and Banerjee, S. (1989) T cell receptor genes and disease susceptibility. *Arthritis Rheum.*, 32:105-107.
33. Haqqi, T.M., Banerjee, S., Jones, W.L., Anderson, G.D., Behlke, M.A., Loh, D.Y., Luthra, H.S., and David, C.S. (1989) Identification of T cell receptor Vβ deletion mutant mouse strain AU/ssJ (H-2^q) which is resistant to collagen-induced arthritis. *Immunogenetics*, 29:180-185.
34. Banerjee, S., Luthra, H.S., Moore, S.B., and O'Fallon, W.M. (1988) Serum IgG anti-native type II collagen antibodies in rheumatoid arthritis - association with HLA-DR4 and lack of clinical correlation. *Clin. Exp. Rheumatol.*, 6:373-380.
35. Banerjee, S., Haqqi, T.M., Luthra, H.S., Stuart, J.M., and David, C.S. (1988) Possible role of Vβ T cell receptor genes in susceptibility to collagen-induced arthritis in mice. *J. Exp. Med.*, 167:832-839.
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42. Malaviya, A.N., Banerjee, S., and Mishra, R.N. (1983) Immunology of the gastrointestinal tract. *Trop. Gastroenterol.*, 4:196-202.

RADIOACTIVITY TRAINING AND EXPERIENCE

Date: 18 September 2006
Name: Subhashis Banerjee, MD Social Security No.: [redacted]
Department: Dev Ops Department Charge No.: Supervisor: Howard Uderman, MD

Education: See CV

TRAINING AND EXPERIENCE

Type of Training	Where Trained	Duration of Training	On the Job	Formal Courses
a. Principles and practices of radiation protection.	1. Mayo Clinic, Rochester, MN	4/1985-9/1988	Laboratory >100 h	Annual radiation safety training – 4 h each year
	2. Shriners Hospital, Montreal, Canada	10/1988 – 5/1993	Laboratory >100 h	-
	3. Abbott Bioresearch Center, Worcester, MA	6/1993 – 12/2001	Laboratory > 100 h	Annual radiation safety training – 4 h each year
	4. Pfizer New Haven CRU, New Haven, CT	5/2006	Principal Investigator- ADME study A5561008	Annual radiation safety training – 4 h each year
	5. Radiation Safety Associates, Inc Hebron, CT	9/11/2006 – 9/15/2006	-	Radiation Safety Officer Training Course
b. Radioactivity measurement standardization and monitoring techniques and instruments.	As above using G-M pancake detector and liquid scintillation counting.	As above	As above	As above

PERSONAL INFORMATION WAS REMOVED BY NRC. NO COPY OF THIS INFORMATION WAS RETAINED BY THE NRC.

TRAINING AND EXPERIENCE

Type of Training	Where Trained	Duration of Training	On the Job	Formal Courses
c. Mathematics and calculations basic to the use of radioactivity.	As above	As above	-	As above
d. Biological effects of radiation.	In addition to above, training received in medical school (Christian Medical College, Vellore, India 1976-1977) as well as during Internal Medicine residencies - patient management and lectures on radiological diagnosis and radiotherapy (Christian Medical College Hospital, Vellore, India: 1979-1982; St. Vincent Hospital, Worcester, MA: 2002-2004)			

EXPERIENCE WITH RADIATION (Actual use of radioisotopes or equivalent experience.)

Isotope	Maximum Amount	Where Experience was Gained	Duration of Experience	Type of Use
^{3}H	1 mCi	Mayo Clinic Shriners Hospital, Montreal Abbott Bioresearch Center	4/1985-9/1988 10/1988-5/1993 6/1993-12/2001	Tritiated thymidine-lymphocyte proliferation assays *in vitro*
$^{32}P/^{33}P$	1 mCi	Mayo Clinic Abbott Bioresearch Center	4/1985-9/1988 6/1993-12/1996	Northern and Southern Blotting
^{125}I	1 mCi	Mayo Clinic Abbott Bioresearch Center	4/1985-9/1988 6/1993-12/1996	Radioimmunoassays
^{51}Cr	1 mCi	Mayo Clinic Shriners Hospital, Montreal Abbott Bioresearch Center	4/1985-9/1988 10/1988-5/1993 6/1993-12/1996	Cytotoxicity assays *in vitro*
^{14}C	100 μCi/subject	Pfizer New Haven CRU, CT	5/2006	Principal Investigator on A5561008-ADME study