Jeng-Shin Lee, M.D., Ph.D.

Seasoned molecular biologist with medical background and a wide range of academic and industry experience. Track record in the development of protein biologics, gene and cell therapy, from exploratory to preclinical phase, process development to cGMP manufacturing in support of investigational new drug (IND) application. Well versed in all commonly used expression and viral vector systems, molecular cloning and functional characterization of immunological proteins across species. Leadership and management experience in both large and small organizational settings.

Professional Experience

AB Biosciences, Inc., Allston, MA: Chief Scientific Officer 2011 - present
Harvard Gene Therapy Initiative, Harvard Medical School, Boston MA: Deputy Director 2005 - 2011
Vector Core, Dana Farber Harvard Cancer Center, Boston MA: Co-Director 2007 - 2011
Department of Genetics, Harvard Medical School, Boston MA: Research Associate 1999 - 2011
Harvard Gene Therapy Initiative, Boston MA: Head, Research Vector Core 2001 - 2005
Harvard Gene Therapy Initiative, Boston MA: Associate Director, Vector Development 1999 - 2005

Postdoctoral training

Harvard Medical School, Howard Hughes Medical Institute/Children's Hospital, Boston MA
1996 – 1999
Research Fellow, Professor Richard C. Mulligan, Department of Genetics
Harvard Medical School, Boston MA 1995 – 1996
Postdoctoral Fellow, Professor Yang Shi, Department of Pathology
Taipei Institute of Pathology, Taipei, Taiwan 1990 – 1991
Resident (Anatomical Pathology)

Education

Harvard University, Cambridge, Massachusetts
Ph.D., Committee on Virology, 1991 - 1995
Thesis Adviser: Professor Yang Shi, Department of Pathology
Thesis title: Transcriptional regulation by Yin-Yang 1 and adenovirus E1A.

National Taiwan University, Taipei, Taiwan
M.D., 1983 - 1990

Additional Training

Massachusetts Biotechnology Council, Cambridge MA 2005
An Overview of Clinical Research- a 15 week education program on clinical research

Honors

Cooley's Anemia Foundation Fellow 1997-1999
Albert J. Ryan Fellow 1994
Schering Corporation Scholar 1986, awarded jointly by Schering Corporation and the American Bureau of Medical Advancement in the Republic of China

Peer Review Experience

-Ad Hoc reviewer for Journal of Gene Medicine, Oncogene, Tuberculosis, Vaccine, Liver International, Life Sciences, Tissue Antigens
-Scientific reviewer for Department of Defense, Congressionally Directed Medical Research Programs

Publications

1. Kuo CH, Chang BI, Lee FT, Chen PK, Lee JS, Shi GY, Wu HL Development of Recombinant Adeno-Associated Virus Serotype 2/8 Carrying Kringle Domains of Human Plasminogen for Sustained Expression and Cancer Therapy. Hum Gene Ther. 2015 Sep; 26(9):603-13.
2. Burkhardt UE, Hainz U, Stevenson K, Goldstein NR, Pasek M, Naito M, Wu D, Ho VT, Alonso A, Hammond NN, Wong J, Sievers QL, Brusic A, McDonough SM, Zeng W, Perrin A, Brown JR, Canning CM, Koreth J, Cutler C, Armand P, Neuberg D, Lee JS, Antin JH, Mulligan RC, Sasada T, Ritz J, Soiffer RJ, Dranoff G, Alyea

EP, Wu CJ. Autologous CLL cell vaccination early after transplant induces leukemia-specific T cells. J Clin Invest. 2013 Sep; 123(9):3756-65.
3. Brusic A, Hainz U, Wadleigh M, Neuberg D, Su M, Canning CM, Deangelo DJ, Stone RM, Lee JS, Mulligan RC, Ritz J, Dranoff G, Sasada T, Wu CJ. Detecting T-cell reactivity to whole cell vaccines: Proof of concept analysis of T-cell response to K562 cell antigens in CML patients. Oncoimmunology. 2012 Oct 1; 1(7):1095-1103.
4. Kuo CH, Chen PK, Chang BI, Sung MC, Shi CS, Lee JS, Chang CF, Shi GY, Wu HL. The recombinant lectin-like domain of thrombomodulin inhibits angiogenesis through interaction with Lewis Y antigen. Blood. 2012 Feb 2; 119(5):1302-13.
5. Schwenter F, Zarei S, Luy P, Padrun V, Bouche N, Lee JS, Mulligan RC, Morel P, Mach N. Cell encapsulation technology as a novel strategy for human anti-tumor immunotherapy. Cancer Gene Ther. 2011 Aug; 18(8):553-62.
6. Sanchez CE, Tierney TS, Gale JT, Alavian KN, Sahin A, Lee JS, Mulligan RC, Carter BS. Recombinant adeno-associated virus type 2 pseudotypes: comparing safety, specificity, and transduction efficiency in the primate striatum. Laboratory investigation. J Neurosurg. 2011 Mar; 114(3):672-80.
7. El Haddad N, Heathcote D, Moore R, Yang S, Azzi J, Mfarrej B, Atkinson M, Sayegh MH, Lee JS, Ashton-Rickardt PG, Abdi R. Mesenchymal stem cells express serine protease inhibitor to evade the host immune response. Blood. 2011 Jan 27; 117(4):1176-83.
8. McFarland NR, Lee JS, Hyman BT, McLean PJ. Comparison of Transduction Efficiency of Recombinant AAV Serotypes 1, 2, 5, and 8 in the Rat Nigrostriatal System. J Neurochem. 2009 May; 109(3):838-45.
9. Rodino-Klapac LR, Lee JS, Mulligan RC, Clark KR, Mendell JR. Lack of toxicity of alpha-sarcoglycan overexpression supports clinical gene transfer in LGMD2D. Neurology 2008 Jul 22;71(4):240-7.
10. Butler MO, Lee JS, Ansen S, Neuberg D, Hodi FS, Murray AP, Drury L, Berezovskaya A, Mulligan RC, Nadler LM, Hirano N. Long-Lived Antitumor CD8+ Lymphocytes for Adoptive Therapy Generated Using an Artificial Antigen-Presenting Cell. Clin Cancer Res. 2007 Mar 15; 13(6):1857-1867.
11. Tam BY, Wei K, Rudge JS, Hoffman J, Holash J, Park SK, Yuan J, Hefner C, Chartier C, Lee JS, Jiang S, Nayak NR, Kuypers FA, Ma L, Sundram U, Wu G, Garcia JA, Schrier SL, Maher JJ, Johnson RS, Yancopoulos GD, Mulligan RC, Kuo CJ. VEGF modulates erythropoiesis through repression of adult hepatic erythropoietin synthesis. Nat Med. 2006 Jul;12(7):793-800.
12. Mostoslavsky G, Kotton DN, Fabian AJ, Gray JT, Lee JS, Mulligan RC. Efficiency of transduction of highly purified murine hematopoietic stem cells by lentiviral and oncoretroviral vectors under conditions of minimal in vitro manipulation. Mol Ther. 2005 Jun;11(6):932-40.
13. Yen, L., Svendsesn, J., Lee, J.-S., Gray, J.T., Magnier, M., Baba, T., D'Amato, R.J. and Mulligan, R.C. Exogenous control of mammalian gene expression via modulation of RNA self-cleavage. Nature 2004; 431: 471 – 476
14. Fernandes JR, Duvivier-Kali VF, Keegan M, Hollister-Lock J, Omer A, Su S, Bonner-Weir S, Feng S, Lee JS, Mulligan RC, Weir GC. Transplantation of islets transduced with CTLA4-Ig and TGFbeta using adenovirus and lentivirus vectors. Transpl Immunol. 2004 Nov;13(3):191-200.
15. Kettner A, Pivniouk V, Kumar L, Falet H, Lee JS, Mulligan R, Geha RS. Structural requirements of SLP-76 in signaling via the high-affinity immunoglobulin E receptor (Fc epsilon RI) in mast cells. Molecular and Cellular Biology 2003;23:2395-406
16. Rebel VI, Hartnett S, Lee JS, Tanaka M, Pulsipher M, Nathan DG, Mulligan RC, and Sieff CA. One day ex vivo culture allows effective gene transfer into human NOD/SCID repopulating cells using high titer VSV-G pseudotyped retrovirus. Blood 1999; 93: 2217-2224
17. Pulsipher M, Kupfer GM, Naf D, Suliman A, Lee JS, Jacobs P, Grompe M, Sieff C, Guinan E, Mulligan R and D'Andrea AD. Subtyping analysis of Fanconi anemia by immunoblotting and retroviral gene transfer. Molecular Medicine 1998; 4: 468-479
18. Shi Y, Lee JS, Galvin KM. Everything you have ever wanted to know about Yin-Yang 1..... Biochimica et Biophysica Acta 1997; 1332: F49-F66
19. Lee JS, Zhang X, Shi Y. Differential interactions of the CREB/ATF family of transcription factors with p300 and adenovirus E1A. J. Biol. Chem 1996; 271: 17666-17674
20. Lee JS, See RH, Shi Y. Adenovirus E1A downregulates cJun- and JunB-mediated transcription by targeting their co-activator p300. Molecular and Cellular Biology 1996; 16: 4312-4326

21. Lee JS, Galvin KM, See RH, Eckner R, Livingston DM, Moran E, Shi Y. Relief of YY1 transcriptional repression by adenovirus E1A is mediated by E1A-associated protein p300. Genes & Development 1995; 9: 1188-98
22. Lee JS, See RH, Galvin KM, Wang J, Shi Y. Functional interactions between YY1 and E1A. Nucleic Acids Research 1995; 23: 925-31
23. Riggs KJ, Saleque S, Wong KK, Merrell KT, Lee JS, Shi Y, Calame K. Yin-Yang 1 activates the c-myc promoter. Molecular and Cellular Biology 1993; 13: 7487-95
24. Lee JS, Galvin KM, Shi Y. Evidence for physical interaction between the zinc-finger transcription factors YY1 and Sp1. Proc. Natl. Acad. Sci. USA 1993; 90: 6145-49

Patents

Application No.	Filing Date	Title
WO 2013152011	04-2013	Novel human control antibodies and uses therefor
US 20150099862	04-2013	Novel human control antibodies and uses therefor
WO 2013028541	08-2012	Vegf-binding protein for blockade of angiogenesis
EP 2744508	08-2012	Vegf-binding protein for blockade of angiogenesis
US 20140302025	08-2012	Vegf-binding protein for blockade of angiogenesis
US 20060084093	08-2005	Packaging cells comprising codon-optimized gagpol sequences and lacking lentiviral accessory proteins
WO 2002059338	01-2002	Retroviral vectors for transduction into quiescent cells and packaging systems for them
EP 1358342	01-2002	Retroviral vectors for transduction into quiescent cells and packaging systems for them
CA 2433867	01-2002	Retroviral vectors for transduction into quiescent cells and packaging systems for them