

Reety Arora, Ph.D.

Merkel cell polyomavirus positive Merkel cell carcinoma

National Centre for Biological Sciences, Bangalore



Brief Biography:

Dr. Reety Arora is a Wellcome trust DBT India Alliance Early Career Fellow working in Professor Sudhir Krishna's group at National Centre for Biological Sciences, or NCBS, in Bangalore. She started her career in science with an engineering degree in biotechnology from Panjab University, Chandigarh. After this she pursued her PhD in Molecular biology at University of Pittsburgh, USA. She hails from Drs. Patrick Moore and Yuan Chang's laboratory, who discovered two human tumor viruses, KSHV and MCV. Reety then returned to India to pursue her post-doctoral fellowship in Prof. Jyotsna Dhawan's laboratory at inStem, Bangalore studying quiescence in muscle stem cells. Her passion for tumor viruses brought her back to cancer research and currently studies a rare, aggressive skin cancer called Merkel cell carcinoma. Merkel cell carcinoma is caused by a polyomavirus and Reety is investigating how the viral oncoproteins specifically target Merkel cells and dedifferentiate them to a stem-like state. She is also exploring the use of CRISPR/Cas9 system to knock-out the expression of these viral proteins and potential applications to therapy.

List of Publications

1. Cheedipudi S., Puri D., Saleh A., Gala H., Rumman M., Pillai M., Sreenivas P., **Arora R.**, Sellathurai J., Schroeder H., Mishra R., Dhawan J. A fine balance: Epigenetic control of cellular quiescence by the tumor suppressor PRDM2/RIZ at a bivalent domain in Cyclin A gene. 2015. *Nucleic Acids Research*. 2015. Jul 27;43(13):6236-56. [PMID: 26040698]
2. Dresang L.R., Guastafierro A., **Arora R.**, Normolle D., Chang Y., Moore P.S.. Response of Merkel cell polyomavirus-positive Merkel cell carcinoma xenografts to a survivin inhibitor. *PLoS One*. 2013. Nov 18;8(11): e80543. [PMID 24260412]
3. **Arora R.**, Shuda M., Guastafierro A., Feng H., Toptan T., Tolstov Y., Normolle D., Vollmer L., Vogt A., Dömling A., Brodsky J., Chang Y., Moore P.S. Survivin is a therapeutic target in Merkel cell carcinoma. *Science Translational Medicine*. 2012 May 9; 4(133): 133ra56. [PMID: 22572880]
4. Tolstov Y.L., **Arora R.**, Scudiere S.C., Busam K.J., Chaudhary P.M., Chang Y., Moore P.S. Lack of evidence for direct involvement of Merkel cell polyomavirus (MCV) in chronic lymphocytic leukemia (CLL). *Blood*. 2010; 115(23): 4973-4974. [PMID: 20538816]
5. Shuda M. *, **Arora R. ***, Kwun H.J.*, Feng H., Sarid R., Fernández-Figueras M.T., Tolstov Y., Gjoerup O., Mansukhani M.M., Swerdlow S.H., Chaudhary P.M., Kirkwood J.M., Nalesnik M.A., Kant J.A., Weiss L.M., Moore P.S., Chang Y. Human Merkel cell polyomavirus infection I. MCV T antigen expression in Merkel cell carcinoma, lymphoid tissues and lymphoid tumors. *Int J Cancer*. 2009; 125(6): 1243-1249. *Authors contributed equally to the work. [PMID: 19499546]
6. Busam K.J., Jungbluth A.A., Reckthman N., Coit D., Pulitzer M., Bini J., **Arora R.**, Hanson N.C., Tassello J.A., Frosina D., Moore P.S., Chang Y. Merkel cell polyomavirus expression in merkel cell carcinomas and its absence in combined tumors and pulmonary neuroendocrine carcinomas. *The American journal of surgical pathology*. 2009; 33(9): 1378-1385. [PMID: 19609205]

Review Article

7. **Arora R.**, Chang Y., Moore P.S. MCV and Merkel cell carcinoma: a molecular success story. *Curr Opin Virol*. 2012 Aug; 2(4): 489-98 [PMID: 22710026]

Book Chapter

8. **Arora R.**, Rumman M., Venugopal N., Gala H.P. and Dhawan J. Mimicking muscle stem cell quiescence in culture: methods for synchronization in reversible arrest. Eusebio Perdiguerro and Dawn Cornelison (Eds). *Muscle Stem Cells: Methods in Molecular Biology*. 2017; Vol. 1556, 978-1-4939-6769-8, 329459_1_En, (15)\

Grants and Fellowships

- Wellcome Trust- DBT India Alliance Early Career Fellowship 2015- 2020
- Career Development Fellowship, inStem-NCBS 2013-2015
- Start-Up Grant for Young Scientists, Dept. of Science and Technology (DST-SERB), Govt. of India 2014-2015