Dr. Dipika Ramdas Kalambhe, Ph.D.

doctordipikaoffical555@gmail.com · +971 50 965 9103 · WhatsApp +91 97667 87348
dipika.pristellar.com · Google Scholar · ORCID 0009-0007-0026-4638

[Date]

Dr Ken-ichiro Kamei
Reverse Bioengineering Laboratory
Division of Science, New York University Abu Dhabi
Abu Dhabi, United Arab Emirates

Dear Dr Ken-ichiro Kamei,

I am applying for the Post-Doctoral Associate position in the Reverse Bioengineering Laboratory.

Let me be exact about where I sit against your list, because you ask for expertise in several areas and I have some of them and not others. **I have no experience with stem-cell culture or differentiation, no experience fabricating micro- or nano-engineered devices, and none with single-cell or bulk omics or bioinformatics.** What I do have is eight years of designing nanoscale materials that must function inside living cells, and the high-resolution imaging and molecular biology to prove whether they did.

My doctorate at the Shanghai Institute of Materia Medica, Chinese Academy of Sciences, produced a mesoporous polydopamine-based Pickering emulsion that co-delivers two agents with incompatible solubility and release requirements — shikonin and the BET bromodomain inhibitor JQ1 — into triple-negative breast tumours. Designing it meant controlling pore structure, interfacial stabilisation, drug loading, particle size and polydispersity, surface charge and colloidal stability, and measuring each rather than assuming it. That is nanomaterial engineering in service of a biological question, which is how I read the aim of your laboratory.

Establishing what the system did required the rest: confocal and fluorescence imaging to localise labelled material inside cells and tissue, cellular uptake and viability assays, flow cytometry, immunofluorescence and immunohistochemistry, and Western blot, RT-qPCR and ELISA to show which pathways had moved. The result — suppression of primary tumour growth and lung metastasis through simultaneous blockade of epithelial–mesenchymal transition and vasculogenic mimicry — is published in *Acta Pharmacologica Sinica* 46(12):3314-3326, where I am joint first author with equal contribution formally recorded.

I also ran the full in vivo programme independently: study design and institutional ethics approval, dosing and route selection, longitudinal monitoring across multi-arm cohorts, biodistribution, terminal tissue collection, histopathology and organ-toxicity assessment. A project in my hands does not have to pass between the person who makes the material, the person who runs the cell work and the person who runs the animal work.

On what I would be learning: stem-cell culture and differentiation is a technique with a real learning curve but a well-defined one, and device fabrication I would need to be taught. I would rather state that than imply otherwise. The argument for me is that the platform side — making a nanostructured material behave reproducibly at the interface with cells — is the part that usually goes wrong, and it is the part I have spent eight years on. I also built my entire analytical toolkit from nothing during my doctorate, which is the closest evidence I can offer that I acquire new methods quickly.

I hold seven peer-reviewed publications attracting 324 citations (h-index 3, Google Scholar, July 2026), three as first or joint first author, and one filed Indian patent on a transdermal delivery system taken from concept through in vivo safety evidence to filing. My doctorate was funded throughout by the ANSO Young Talent and Belt and Road Government Fellowships. I would welcome the chance to discuss whether the overlap is the right one.

Yours sincerely,

Dr. Dipika Ramdas Kalambhe
Ph.D. Pharmaceutics, Shanghai Institute of Materia Medica, Chinese Academy of Sciences