Dr. Dipika Ramdas Kalambhe, Ph.D.

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[Date]

Prof. Silvia Muro
Targeted Therapeutics and Nanodevices
Institute for Bioengineering of Catalonia (IBEC)
Barcelona, Spain

Dear Prof. Silvia Muro,

I am writing to ask whether your group is considering postdoctoral researchers, and to explain briefly why I am approaching you rather than applying to an advertisement.

I completed a Ph.D. in pharmaceutics at the Shanghai Institute of Materia Medica, Chinese Academy of Sciences, working on targeted polymeric carriers for solid tumours. My doctoral system was a mesoporous polydopamine-based Pickering emulsion that co-delivers shikonin and the BET bromodomain inhibitor JQ1 in a single particle, resolving two incompatible solubility and release profiles. In triple-negative breast cancer models it suppressed primary tumour growth and lung metastasis, and I established the mechanism as apoptosis induction combined with blockade of both epithelial–mesenchymal transition and vasculogenic mimicry. It is published in *Acta Pharmacologica Sinica* 46(12):3314-3326, where I am joint first author with equal contribution formally recorded.

Your group's work on targeted nanoparticle design for crossing biological barriers is where I would want to take that experience next. The barrier I have worked against is the tumour itself — poor perfusion, interstitial pressure, and a stroma that stops most of a dose reaching the cells that matter. The design logic is the same one your group applies elsewhere: decide what the particle must survive, then build backwards from the target.

Practically I would bring carrier design and systematic optimisation against drug loading, encapsulation efficiency, particle size and polydispersity, surface charge, colloidal stability and release; characterisation by DLS, zeta potential, TEM, SEM, HPLC and UV–Vis; the cell biology that establishes whether targeting worked, including uptake studies, confocal imaging, flow cytometry and immunofluorescence; and a complete in vivo capability — study design and ethics approval, dosing, monitoring, biodistribution, histopathology and organ toxicity — which I have run without supervision.

What I have not done: I have not worked on the blood–brain barrier, the retina or bacterial biofilms, and my payloads have been small molecules rather than enzymes or nucleic acids. Those would be new, and I would rather say so than let it surface at interview.

I hold seven peer-reviewed publications attracting 324 citations, three as first or joint first author, and one filed Indian patent. I am eligible for an MSCA Postdoctoral Fellowship, whose 2026 call closes on 9 September, and for the Spanish Juan de la Cierva – Formación scheme, and I would be glad to write either proposal myself with your group as host. My CV and a research statement are enclosed.

Yours sincerely,

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