



Rosita Primavera

Basic Life Research Scientist, Rad/Pediatric Radiology

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BIO

Dr. Rosita Primavera is a Basic Life Research Scientist at Stanford University in the Department of Radiology/Pediatric Radiology. With an MD in Chemistry and Pharmaceutical Technology and a PhD in Cellular and Molecular Biotechnologies, she brings a robust educational background to her research endeavors. Dr. Primavera has extensive experience in developing nano- and micro-drug delivery systems (DDS) as well as 3D platforms aimed at treating various diseases.

Her training includes a variety of techniques for creating drug delivery systems and 3D platforms, utilizing both synthetic and natural materials, and employing methods such as top-down and bottom-up fabrication. Over the past few years, Dr. Primavera's research interests have increasingly focused on diabetes. She has received extensive training in handling and processing pancreatic islets from multiple sources, including mice, rats, and humans, equipping her with the expertise needed to conduct both in vitro and in vivo experiments involving diabetic animal models. Dr. Primavera is focused on developing an on-command system that mimics pancreatic islet function. Her current research further investigates the role of 3D bioscaffolds in pancreatic islet transplantation, along with the involvement of mesenchymal stem cells in diabetes treatment. She is particularly interested in innovative cellular approaches, such as co-transplantation of islets alone, within cutting-edge bioscaffolds, or in conjunction with stem cells. Through her work, Dr. Primavera aims to enhance therapeutic strategies for diabetes and improve patient outcomes.

HONORS AND AWARDS

- Award "Aldo La Manna" for best graduation thesis, ADRITELF CRS 2014, Florence, Italy (2014)

EDUCATION AND CERTIFICATIONS

- Postdoctoral Scholar, Interventional Regenerative Medicine and Imaging Laboratory Stanford University, Radiology Department, Stanford, CA , β cell regeneration using islet cell transplantation and construction of novel 3D porous bioscaffolds loaded with stem cells or extracellular vesicles for pancreatic islet transplantation. (2022)
- Postdoctoral Scholar, Italian Institute of Technology - Genova , Nanotechnology for Precision Medicine (2019)
- PhD, University of Teramo - Italy , Cellular and Molecular Biotechnology (2017)
- MS, Università degli Studi "G. d' Annunzio" Chieti-Pescara, Italia , Pharmacy (2014)

Professional

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Member, CRS Italy Local Chapter (Italian Chapter of the Controlled Release Society). (2018 - present)
- Member, S.C.I. (Società Chimica Italiana): Divisione di Tecnologia Farmaceutica e Divisione di Chimica Farmaceutica. (2020 - present)
- Member, A.D.R.I.T.E.L.F. (2020 - present)

- Member, ISNAFF (2020 - present)
- Reviewer, MDPI (Pharmaceutics, Nanomaterials, Antioxidant, Life) (2020 - present)
- Reviewer, ACS Biomaterials Science & Engineering (2020 - present)
- Guest Editor, Pharmaceutics (2022 - present)

Publications

PUBLICATIONS

- **Preventing the onset of diabetes with precision delivery of mesenchymal stem cells to the pancreas in a preclinical model.** *Stem cell research & therapy*
Yarani, R., Primavera, R., Chetty, S., Wang, J., Kaur, S., Haupt-Jorgensen, M., Pociot, F., Thakor, A. S.
2025
- **Mesenchymal stromal cell therapy in epidermolysis bullosa: current perspectives and future directions.** *Frontiers in cell and developmental biology*
Sia, T., Primavera, R., Johnson, M. R., Dukkipati, H. S., Teng, J. M., Thakor, A. S.
2025; 13: 1703109
- **Adipose-derived mesenchymal stromal/stem cells in type 1 diabetes treatment.** *Communications biology*
Sood, V., Ricioli, H., Njoku, G. C., Primavera, R., Dietrich, S., Thakor, A. S., Pociot, F., Yarani, R.
2025; 8 (1): 1094
- **Controlled Nutrient Delivery to Pancreatic Islets Using Polydopamine-Coated Mesoporous Silica Nanoparticles.** *Nano letters*
Primavera, R., Wang, J., Buchwald, P., Ganguly, A., Patel, S., Bettencourt, L., Chetty, S., Yarani, R., Regmi, S., Levitte, S., Kevadiya, B., Guindani, M., Decuzzi, et al
2025
- **Time-course analysis of cisplatin induced AKI in preclinical models: implications for testing different sources of MSCs.** *Journal of translational medicine*
Ganguly, A., Chetty, S., Primavera, R., Levitte, S., Regmi, S., Dulken, B. W., Sutherland, S. M., Angeles, W., Wang, J., Thakor, A. S.
2024; 22 (1): 789
- **Therapeutic potential of exosomes derived from mesenchymal stem cells for treatment of systemic lupus erythematosus.** *Journal of inflammation (London, England)*
Samavati, S. F., Yarani, R., Kiani, S., HoseinKhani, Z., Mehrabi, M., Levitte, S., Primavera, R., Chetty, S., Thakor, A. S., Mansouri, K.
2024; 21 (1): 20
- **Precision Delivery of Human Bone Marrow-Derived Mesenchymal Stem Cells Into the Pancreas Via Intra-arterial Injection Prevents the Onset of Diabetes.** *Stem cells translational medicine*
Primavera, R., Regmi, S., Yarani, R., Levitte, S., Wang, J., Ganguly, A., Chetty, S., Guindani, M., Ricordi, C., Meyer, E., Thakor, A. S.
2024
- **β Cell and Autophagy: What Do We Know?** *Biomolecules*
Mohammadi-Motlagh, H. R., Sadeghalvad, M., Yavari, N., Primavera, R., Soltani, S., Chetty, S., Ganguly, A., Regmi, S., Fløyel, T., Kaur, S., Mirza, A. H., Thakor, A. S., Pociot, et al
2023; 13 (4)
- **Integrated transcriptome-proteome analyses of human stem cells reveal source-dependent differences in their regenerative signature.** *Stem cell reports*
Ganguly, A., Swaminathan, G., Garcia-Marques, F., Regmi, S., Yarani, R., Primavera, R., Chetty, S., Bermudez, A., Pitteri, S. J., Thakor, A. S.
2022
- **Umbilical cord mesenchymal stromal cells-from bench to bedside.** *Frontiers in cell and developmental biology*
Chetty, S., Yarani, R., Swaminathan, G., Primavera, R., Regmi, S., Rai, S., Zhong, J., Ganguly, A., Thakor, A. S.
2022; 10: 1006295
- **Mesenchymal stromal cells for the treatment of Alzheimer's disease: Strategies and limitations.** *Frontiers in molecular neuroscience*
Regmi, S., Liu, D. D., Shen, M., Kevadiya, B. D., Ganguly, A., Primavera, R., Chetty, S., Yarani, R., Thakor, A. S.

2022; 15: 1011225

- **Conformable hierarchically engineered polymeric micromeshes enabling combinatorial therapies in brain tumours.** *Nature nanotechnology*
Di Mascolo, D., Palange, A. L., Primavera, R., Macchi, F., Catelani, T., Piccardi, F., Spano, R., Ferreira, M., Marotta, R., Armirotti, A., Gallotti, A. L., Galli, R., Wilson, et al
2021
- **Enhancing islet transplantation using a biocompatible collagen-PDMS bioscaffold enriched with dexamethasone-microplates.** *Biofabrication*
Primavera, R., Razavi, M., Kevadiya, B. D., Wang, J., Vykunta, A., Di Mascolo, D., Decuzzi, P., Thakor, A.
2021
- **Silicone-based bioscaffolds for cellular therapies.** *Materials science & engineering. C, Materials for biological applications*
Razavi, M. n., Primavera, R. n., Vykunta, A. n., Thakor, A. S.
2021; 119: 111615
- **Insulin Granule-Loaded MicroPlates for Modulating Blood Glucose Levels in Type-1 Diabetes.** *ACS applied materials & interfaces*
Primavera, R., Bellotti, E., Di Mascolo, D., Di Francesco, M., Wang, J., Kevadiya, B. D., De Pascale, A., Thakor, A. S., Decuzzi, P.
2021
- **Cellular uptake and retention of nanoparticles: Insights on particle properties and interaction with cellular components** *MATERIALS TODAY COMMUNICATIONS*
Augustine, R., Hasan, A., Primavera, R., Wilson, R., Thakor, A. S., Kevadiya, B. D.
2020; 25
- **Hybrid Polydimethylsiloxane Bioscaffold-Intravascular Catheter for Cellular Therapies** *ACS APPLIED BIO MATERIALS*
Hu, S., Primavera, R., Razavi, M., Avadhani, A., Wang, J., Thakor, A. S.
2020; 3 (10): 6626–32
- **Hybrid Polydimethylsiloxane Bioscaffold-Intravascular Catheter for Cellular Therapies.** *ACS applied bio materials*
Hu, S., Primavera, R., Razavi, M., Avadhani, A., Wang, J., Thakor, A. S.
2020; 3 (10): 6626-6632
- **A Collagen Based Cryogel Bioscaffold that Generates Oxygen for Islet Transplantation.** *Advanced functional materials*
Razavi, M., Primavera, R., Kevadiya, B. D., Wang, J., Buchwald, P., Thakor, A. S.
2020; 30 (15)
- **A Collagen Based Cryogel Bioscaffold that Generates Oxygen for Islet Transplantation** *ADVANCED FUNCTIONAL MATERIALS*
Razavi, M., Primavera, R., Kevadiya, B. D., Wang, J., Buchwald, P., Thakor, A. S.
2020
- **Emerging Nano- and Micro-Technologies Used in the Treatment of Type-1 Diabetes.** *Nanomaterials (Basel, Switzerland)*
Primavera, R. n., Kevadiya, B. D., Swaminathan, G. n., Wilson, R. J., De Pascale, A. n., Decuzzi, P. n., Thakor, A. S.
2020; 10 (4)
- **Rapid Antibody-Based COVID-19 Mass Surveillance: Relevance, Challenges, and Prospects in a Pandemic and Post-Pandemic World.** *Journal of clinical medicine*
Augustine, R. n., Das, S. n., Hasan, A. n., S, A. n., Abdul Salam, S. n., Augustine, P. n., Dalvi, Y. B., Varghese, R. n., Primavera, R. n., Yassine, H. M., Thakor, A. S., Kevadiya, B. D.
2020; 9 (10)
- **Engineering shape-defined PLGA microPlates for the sustained release of anti-inflammatory molecules.** *Journal of controlled release : official journal of the Controlled Release Society*
Di Francesco, M. n., Primavera, R. n., Summa, M. n., Pannuzzo, M. n., Di Francesco, V. n., Di Mascolo, D. n., Bertorelli, R. n., Decuzzi, P. n.
2019