Saman Sharifi

Translational Pharmacologist & Drug Discovery Scientist | PharmD & Pharmacology PhD (cum laude) | Awarded MSCA Fellow

Oncology* | *Senescence & Aging* | *Preclinical Pharmacology* | *Scientific Project Leadership* | *Digital Biology & AI

PROFESSIONAL SUMMARY

Profile: PharmD- and PhD-trained translational pharmacologist with 7+ years of international research experience across drug discovery, oncology, cellular senescence, treatment resistance, preclinical pharmacology and therapeutic development; combining experimental biology, project leadership, scientific writing and data-driven research.

International training & research exposure: India, Italy, Switzerland, Austria and Canada. Experience spans academic discovery, industry-academic collaboration, translational pharmacology, target validation, biomarker analysis, organoids, xenografts, aging models and oncology resistance biology.

Core scientific expertise: Senolytic discovery, cancer-cell vulnerabilities, therapy-induced cellular states, prostate-cancer adaptive resistance, CAR-T target validation, therapeutic screening, mechanism-of-action studies, in vivo pharmacology, molecular biology, IF/IHC imaging, RNA-seq and translational biomarker development.

Drug-discovery & translational focus: Biological hypothesis generation, therapeutic screening and prioritization, mechanistic validation, pharmacological characterization, efficacy and toxicity assessment, bioavailability / PK-PD-related interpretation, biomarker strategy, patient-relevant models and integration of multidisciplinary evidence to guide development decisions.

Scientific project leadership: Led and coordinated multidisciplinary research across academic, pharmaceutical and external partners; experience with experimental strategy, work planning, grant-supported development, scientific documentation, supervision and cross-institutional delivery.

Digital biology & entrepreneurship: Founder of Cellulai(TM) / Nbulai, an early-stage biomedical R&D services and image-analysis platform designed to support research teams with scientist-guided image analysis, structured biological data, interpretable outputs and ML-ready workflows.

Computational & AI literacy: Practical experience with Python / R, biomedical image analysis, structured biological datasets, machine-learning-assisted candidate prioritization and quantitative phenotyping; positioned as a translational scientist working effectively at the biology-data interface rather than as a dedicated bioinformatician.

Funding, IP & publications: >370,000 CHF competitive research funding; Innosuisse 2020-2024; Marie Sklodowska-Curie EPFLeaders4impact (Horizon 2020 / MSCA-COFUND); experience with Sinergia-related grant development; lead inventor, Italian Patent No. 102025000019765; first-author Nature Aging manuscript under revision; co-author work in Cell and Cell Reports Medicine.

Scientific communication & writing: Grant and proposal development, manuscripts, protocols, mechanistic rationales, data summaries, patent-related writing, scientific presentations and multidisciplinary project documentation.

Certifications & working style: ICH-GCP certified (100% score); FELASA Category C; internationally experienced, collaborative and comfortable connecting experimental science, translational strategy, project coordination and emerging digital tools.

PROFESSIONAL EXPERIENCE

Visiting Senior Postdoctoral Researcher | University of British Columbia | *Canada* **2025–Present**

- Translational prostate-cancer research focused on treatment resistance, therapy-induced cellular states and therapeutically actionable vulnerabilities using mechanistic, imaging and preclinical models.
- Integrates longitudinal phenotyping, biomarker analysis, quantitative imaging and computational approaches to characterize heterogeneous responses to androgen-receptor pathway inhibition.

Senior Postdoctoral Fellow | Oncology Research Team, Johannes Kepler University | *Austria* **2024**

Marie Skłodowska-Curie Postdoctoral Fellow | EPFL SV, EPFL | *Switzerland* **2023**

Project Lead & Junior Scientist (Industry-Academic Collaboration) | VIMM / IBSA Pharmaceutical / IOR, Department of Medicine, University of Padova | *Italy* **2022**

- Led a pharma-linked senolytic discovery program spanning therapeutic screening, in-vitro validation, mechanism-of-action studies, in-vivo efficacy in aging models, toxicity / bioavailability assessment and translational interpretation; coordinated academic, pharmaceutical and external collaborators and contributed to Innosuisse-supported development activities.

EDUCATION

Ph.D., Pharmacology, Toxicology and Therapy (cum laude) | Department of Pharmaceutical and Pharmacological Sciences, University of Padova | *Italy* **2019–2022**

• Research included senolytic discovery, in vitro and in vivo experimental design, pharmacological characterization, data analysis and translational development leading to patentable intellectual property.

PharmD (Medical School) | Krupanidhi College, Rajiv Gandhi University of Health Sciences | *India* **2012–2019**

RESEARCH OUTPUTS, PUBLICATIONS, SOFTWARE & PATENT

TITLE	AUTHOR(S)	TYPE	SOURCE / STATUS	ROLE / CONTRIBUTION
Identification of a naturally occurring agent that induces senolysis in aging and chemotherapy-induced senescence (2025)	Sharifi et al	Original research	Nature Aging Under revision NATAGING-A06687	First Author
Targeting the seno-antigen for improved CAR T cell therapy in castration-resistant prostate cancer (2025)	Bressan S. et al	Original research	Cell Under revision CELL-D-25-03493 Rebuttal submitted Apr 2026	Co-author: target validation; 2D/organoid senescence models; preclinical Pten-null mouse experiments
Opantimirs: A class of antagonizing microRNAs that upregulate Opa1 and improve mitochondrial and disuse myopathies (2025)	Djalavandi A. et al	Original research	Cell Reports Medicine IF 10.6	Co-author: in vivo experiments, ex vivo processing, whole blood count, in vitro toxicity assays link
Targeting senescence induced by age or chemotherapy with a polyphenol-rich natural extract improves longevity and healthspan in mice (2024)	Zumerle S. et al	Original research	Nature Aging link	Co-author: in vivo experiments, ex vivo processing, aging phenotype measurement
Commensal bacteria promote endocrine resistance in prostate cancer through androgen biosynthesis (2021)	Nicolò P. et al	Video Abstract	Science link	Video editor and narrator
Naturally originated molecule as senolytic agent for use in cosmetic and/or pharmaceutical treatment of an aging-related disorder (2021)	Sharifi S.; Alimonti A	Patent	ADV-00582PTIT Italian Patent No. 102025000019765 “Nuovi Agenti Senolitici”	Inventor
Adaptation of a published machine-learning workflow for prioritization in prostate cancer adaptive resistance	Sharifi S.	Computational training project adapted from published ML drug-discovery framework	Internal portfolio project; logistic regression, random forest and XGBoost; crossvalidation; accuracy, precision, recall and F1-score comparison	Dataset preparation; therapeutic candidate
Cellulai™: scientist-guided machine learning for biomedical image analysis	Sharifi S.	Research software / digital discovery platform	Nbulai; private beta; researchuse only	Founder & lead developer; class training, crop-based ML-ready datasets, heatmaps, objectlevel interpretation and workflow automation
Chemotherapy-Induced Hepatotoxicity in HIV Patients (2021)	S. Bressan*, A. Pierantoni*, S. Sharifi et al	Review article	Cells link	Manuscript writing; graphical abstract design and creation
Development of senolytic therapies for treatment of ageing related disorders (2021)	Sharifi S. et al	Oral presentation / Ph.D. thesis	SIF, 40° Congresso Nazionale link	Screening; in vitro/in vivo experimental design; data analysis
Multiple Effects of Ascorbic Acid against Chronic Diseases: Updated Evidence from Preclinical and Clinical Studies (2020)	M. Berretta* et al; S. Sharifi	Review article	Antioxidants link	Methodology; writing and original draft preparation
Utilization of antibiotics in patients with urinary tract infections - a (2017)	A. Chalise et al; S. Sharifi	study Original research	IAJPR link	Main author
General benefits of vitamin C (2016)	Saman Sharifi	Newsletter article	SYNERGIA link	Main author
Physiological, pharmacokinetic, pharmacodynamic changes during space flight (2017)	Saman Sharifi	Newsletter article	Published link	Main author

CORE COMPETENCIES

Drug Discovery & Pharmacology: therapeutic / phenotypic screening • target identification & validation • mechanism of action • cancer vulnerabilities • senolytic discovery • candidate prioritization

Translational Research: oncology • aging / senescence biology • treatment resistance • biomarkers • patient-relevant models • organoids • 2D/3D systems • translational pharmacology

Preclinical Pharmacology: in vivo efficacy • PK/PD • toxicology • dose-response • xenografts / allografts • pharmacodynamic biomarkers

Scientific Project Leadership: experimental strategy • cross-institutional coordination • pharma-academic collaboration • grantsupported project development • scientific recommendations • risk assessment • mentorship

Digital Biology & AI: biomedical image analysis • ML-assisted candidate prioritization • Python / R • quantitative phenotyping • MLready data structuring • interpretable image outputs

Scientific Writing & Development Interfaces: grants / proposals • manuscripts • protocols • regulatory-style documentation • IP / patents • ethics submissions • scientific presentations • project documentation

DIGITAL BIOLOGY, AI & DATA SYSTEMS

Cellulai(TM) / Nbulai — Founder & Lead Developer: Built an early-stage biomedical R&D services and image-analysis platform integrating scientist-guided class training, crop-based dataset generation, interpretable heatmaps, object-level proposals and ML-ready workflow design for academic and industry-oriented research applications.
Machine-Learning Drug Screening Workflow Adaptation: Adapted a published ML-based drug-discovery workflow as an internal computational training project, comparing logistic regression, random forest and XGBoost models using cross-validation and accuracy, precision, recall and F1score metrics. Strengthened practical experience in biological dataset preparation, model evaluation and therapeutic candidate prioritization.

REGULATORY & MEDICAL WRITING EXPERTISE

- Publications: Lead/co-author, Nature Aging, Nature Communications, Cell, Cell Reports Medicine and peer-reviewed journals.
- Grants: MSCA / Horizon 2020, Innosuisse, Sinergia-related applications and other competitive research funding; scientific narratives, work planning and structured proposal development.
- Regulatory writing: protocols, data summaries and mechanistic rationales — IBSA projects; dossier-aligned.
- Preclinical protocols: objectives, methodology, SAP and safety assessment.
- Patent writing: senolytic molecule, technical description + claims — Italian Patent No. 102025000019765.
- Project coordination: multi-institutional and industry-academic projects involving experimental design, external collaborators, documentation, milestone-driven delivery and funding-related activities.

PRECLINICAL RESEARCH & TECHNICAL SKILLS

In vivo (FELASA C): mouse husbandry / phenotyping • rotarod / hanging / grip strength • glycemia / triglycerides / kyphosis / cataract • i.p. / oral gavage / s.c. / i.v. dosing • LC-MS serum bioavailability • metabolomics • allograft / xenograft • surgical castration • acute / sub-acute / doseescalation toxicology
Post-mortem / tissue processing: dissection • DNA/RNA/protein extraction • single-cell tumor suspensions • prostate organoids • H&E / beta-gal / IF • cryostat sectioning • senescence PD biomarkers • retro-orbital / cardiac blood collection • serum / plasma • whole-organ perfusion
Cell culture: PBMCs / T cells / CD34+ HSCs / mouse BM MDSCs • 2D/3D culture • patient-derived organoids • cancer / non-cancer lines • transfection / transduction • crystal violet / MTT / Sytox Green viability assays • senescence induction and evaluation
Molecular biology: DNA/RNA extraction • qPCR / PCR / electrophoresis / Western blot • bacterial transformation / plasmid preparation • CRISPR-Cas9 • shRNA • TET-on • siRNA (KO/KI) • mitochondrial morphology / ΔΨm / isolation / TEM preparation
Microscopy & flow cytometry: immunofluorescence • confocal / epifluorescence / TEM • multiparametric staining • FACS • CFSE proliferation • immunophenotyping
In silico / computational: protein–ligand docking • SwissADME • RNA-seq bioinformatics • machine-learning / AI-driven image analysis • scientistguided class training • crop-based dataset generation • heatmap / object-level interpretation • predictive pattern detection • Python and R

LEADERSHIP & MENTORING

- Teaching and supervising two medical students for wet experiments and translational research.
- Teaching and supervising one Ph.D. student for their Ph.D. thesis.
- Teaching and supervising one master student for their master thesis.

HONORS, AWARDS & COMPETITIVE FUNDING

- **Marie Skłodowska-Curie grant & EPFLeaders4impact** — EPFL University, Nov 2023
- **Innosuisse grant winner 2022–2024** — 200,000 CHF link
- **Innosuisse grant winner 2020–2022** — 170,000 CHF link
- **Best presentation winner — Manzin award 2022** — €2,000 link
- **Three-Minute Thesis Competition 2022** — Finalist, University of Padova link
- **Best Outgoing International Student, 2018** — Awarded and honored
- **Patient Counselling Competition — FIRST PLACE** — World AIDS Day programme, MVJ Medical and Research Hospital, 1 Dec 2016

TRAINING, CERTIFICATIONS & TEAMWORK EXPERIENCE

- ICH Good Clinical Practice (E6 R2) Certification — Global Health Training Centre (Score: 100%; issued 21 Jul 2025; Certificate No. 275f3120829c-4728-988d-b5f871be2b31).
- FELASA certification: Education course on animal experimentation — Module 1 (Nov 2023).
- National Legislation and Ethics Level 1 training, Modules 1 and 2; 100% completion; Ministry of Health-recognized; 5 CFP (2023).
- Biology and Management of Laboratory Animals training, rodents and lagomorphs; recognized by the Ministry of Health (2023).
- Animal House Part C training (1 hour) for laboratory access procedure (2021).
- Training for work with rodents and lagomorphs in user facilities: risk assessment, biosafety and relevant legislation (2019).
- Statistics lessons for first-year PhD students — Prof. Dario Gregori, University of Padova.
- Courses in Advanced Pharmacology — Department of Pharmaceutical and Pharmacological Sciences, University of Padova.
- Two-month Certificate Course in Clinical Research and Development — Centre for Pharmaceutical Professional Advancement, Krupanidhi College of Pharmacy, with Teleradiology Solutions and Image Core Lab.
- Patient Counselling Competition — FIRST PLACE, World AIDS Day programme, MVJ Medical and Research Hospital (2016).
- Basic Techniques of First Aid — PES College of Pharmacy, Bangalore.
- Camp for Creating Awareness on Blood Donation — Krupanidhi College of Pharmacy with Rotary Bangalore Indiranagar (26 Sep 2016).
- Blood Donation Programme — Krupanidhi College of Pharmacy (26 Sep 2016).

VOLUNTEER EXPERIENCE

National Social Service Volunteer — Special Camp at Muulur Village, Bangalore; two years (Jun 2015–May 2017), Bangalore, India.

ADDITIONAL SKILLS & BACKGROUND

- Website programming: HTML, CSS, JavaScript, JQuery.
- Graphic design / media software: Photoshop, Illustrator, Lightroom, Final Cut Pro, After Effects.
- Experience adjusting to different cultures.
- Professional basketball player and inline skater; represented college basketball team.
- Musical instruments: Setar and harmonica.
- Military service: 2010–2012.
- Pre-University Course (PUC): Shahid Bahonar Pre-University Center, Dezfoul City, Khouzestan Province, Iran; Pre-university exam board, Iran; DISTINCTION; 2008–2009.

LANGUAGE PROFICIENCY

English: IELTS 7; CEFR C1 | **Italian:** A2; B1 ongoing classes | **French:** A1 ongoing classes | **Persian:** Native

REFERENCES AVAILABLE UPON REQUEST. EMPLOYMENT VERIFICATION AND CERTIFICATES AVAILABLE.