GANESH PUSAPATI

Department of Biochemistry, Beckman B435, 279 Campus Dr, Stanford University, Stanford CA 94305

Email: ganesh22@stanford.edu
ganesh.pusapati@gmail.com

Present position	Senior Research Scientist, Stanford University 06/2018 - present
Education	
07/2001 - 04/2004	B.Sc. (Biotechnology), Andhra University, India
07/2004 - 04/2006	M.Sc. (Animal Biotechnology), University of Hyderabad, India
10/2006 - 12/2010	Ph.D., University of Ulm, Germany Advisor: Thomas Seufferelin, M.D.
Research Experience	
01/2011 - 02/2013	Post-doc, Stanford University, United States Advisor: Suzanne Pfeffer, Ph.D.
03/2013 - 12/2015	Post-doc, Stanford University, United States Advisor: Rajat Rohatgi, M.D., Ph.D.
01/2016 - 05/2018	Research Scientist, Stanford University, United States
Honors and Awards	
06/2005 - 04/2006	Shantha Biotech Merit Scholarship
10/2006 - 12/2009	Graduate College 1041 - Molecular Diabetology and Endocrinology in Medicine - Ph.D. Fellowship
07/2014 - 06/2016	American Heart Association - Postdoctoral Fellowship
Research interest	Signal transduction cascades regulating development and disease
Professional Affliations	
2008-2009	Member, American Society for Cell Biology
2010-2011	Member, American Association for Cancer Research
2013-2014	Member, American Heart Association
2015-present	Editorial Board, *Journal of Molecular Biology Research* and *Cancer and Clinical Oncology*
2015-present	Peer Reviewer, *Frontiers in Cell and Developmental Biology*, *Advances in Biochemistry*, and *Cancer Research Journal*

Conferences and Talks

2007	Annual Meeting of the Graduate College 1041 - Molecular Diabetology and Endocrinology in Medicine, Germany (Talk)
2008	Annual Meeting of the International Graduate School in Molecular Medicine, Germany (Talk)
2008	Annual Meeting of the American Society for Cell Biology, U.S.A. (Poster)
2009	Annual Meeting of the International Graduate School in Molecular Medicine, Germany (Talk)
2009	Annual Meeting of the German Society for Digestive and Metabolic Diseases, Germnay (Poster)
2010	Annual Meeting of the American Association for Cancer Research, U.S.A. (Poster)
2010	Annual Meeting of the German Society for Digestive and Metabolic Diseases, Germany (Poster)
2014	Keystone Symposia - Cilia, Development and Disease, U.S.A. (Poster)
2018	Annual Meeting of the American Association for Cancer Research, U.S.A. (Attendee)
2023	Wnt Signaling - Gordon Research Conference, U.S.A. (Attendee)
2025	Wnt Signaling - Gordon Research Conference, U.S.A. (Talk and Poster)

Publications

1. **Pusapati GV**, Krndija D, Armacki M, von Wichert G, von Blume J, Malhotra V, Adler G, Seufferlein T. Role of the second cysteine-rich domain and Pro275 in PKD2 interaction with ARF1, TGN recruitment and protein transport. *Mol Biol Cell.* 2010 21: 1011-1022

2. Azoitei N, **Pusapati GV***, Kleger A*, Moeller P, Kuefer R, Genze F, Wagner M, Van Lint J, Carmeliet P, Adler G, Seufferlein T. Protein kinase D2 is a crucial regulator of tumor cell-endothelial cell communication in gastrointestinal tumors. *Gut*. 2010 59: 1316-1330 (*equal contribution)

3. Kleger A, Seufferlein T, Malan D, Tischendorf M, Storch A, Wolheim A, Latz S, Protze S, Porzner M, Proepper C, Brunner C, Katz SF, **Varma Pusapati G**, *et al.* Modulation of calcium activated potassium channels induces cardiogenesis of pluripotent stem cells and enrichment of pacemaker-like cells. *Circulation.* 2010 122: 1823-1836

4. Kleger A, Loebnitz C, **Pusapati GV**, Armacki M, Mueller M, Tuempel S, Illing A, Hartmann D, Brunner C, Liebau S, *et al.* Protein kinase D2 is an essential regulator of murine myoblast differentiation. *PLoS One*. 2011 6: e14599

5. Azoitei N, Kleger A, Schoo N, Thal DR, Brunner C, **Pusapati GV**, Filatova A, Genze F, Moeller P, Acker T, *et al.* Protein kinase D2 is a novel regulator of glioblastoma growth and tumor formation. *Neuro Oncol.* 2011 13: 710-724

6. **Pusapati GV***, Eiseler T*, Rykx A, Vandoninck S, Derua R, Waelkens E, Van Lint J, von Wichert G, Seufferlein T. Protein kinase D regulates RhoA activity via rhotekin phosphorylation. *J Biol Chem*. 2012 287: 9473-9483 (*equal contribution)

Publications continued

7. Nottingham RM, **Pusapati GV**, Ganley IG, Barr FA, Lambright DG, Pfeffer SR. RUTBC2: A Rab9A effector and GTPase activating protein for Rab36. *J Biol Chem*. 2012 287: 22740-22748

8. **Pusapati GV**, Luchetti G, Pfeffer SR. Ric1/Rgp1 complex is a guanine nucleotide exchange factor for the late Golgi rab6A GTPase and an effector for the medial Golgi Rab33B GTPase. *J Biol Chem*. 2012 287: 42129-42137

9. Armacki M, Joodi G, Nimmagadda SC, de Kimpe L, **Pusapati GV**, Vandoninck S, Van Lint J, Illing A, Seufferlein T. A novel splice variant of calcium and integrin-binding protein 1 mediates protein kinase D2-stimulated tumour growth by regulating angiogenesis. *Oncogene*. 2014 33: 1167-1180

10. **Pusapati GV***, Hughes CE*, Dorn KV*, Zhang D*, Sugianto P, Aravind L, Rohatgi R. EFCAB7 and IQCE regulate hedgehog signaling by tethering the EVC-EVC2 complex to the base of primary cilia. *Dev Cell*. 2014 28: 483-496 (*equal contribution)

11. **Pusapati GV**[#], Rohatgi R[#]. Location, location, and location: compartmentalization of Hedgehog signaling at primary cilia. *EMBO J* 2014 33: 1852-1854 ([#]corresponding author)

12. Carmi Y, Spitzer MH, Linde IL, Burt BM, Prestwood TR, Perlman N, Davidson MG, Kenkel JA, Segal E, **Pusapati GV**, Bhattacharya N, Engleman. Allogeneic IgG combined with dendritic cell stimuli induce antitumour T-cell immunity. *Nature*. 2015 521: 99-104

13. Zhao Z, Lee RT, **Pusapati GV**, Iyu A, Rohatgi R, Ingham PW. An essential role for Grk2 in Hedgehog signalling downstream of Smoothened. *EMBO Rep.* 2016 17:739-752

14. Phua SC, Chiba S, Suzuki M, Su E, Roberson EC, **Pusapati GV**, Setou M, Rohatgi R, Reiter JF, Ikegami K, Inoue T. Dynamic remodeling of membrane momposition drives cell cycle through primary cilia excision. *Cell.* 2017 168:264-279

15. **Pusapati GV*[#],** Kong JH*, Patel BB*, Krishnan A, Sagner A, Kinnebrew M, Briscoe J, Aravind L, Rohatgi R[#]. CRISPR screens uncover genes that regulate target cell sensitivity to the morphogen sonic hedgehog. *Dev Cell*. 2018 44: 113-129 (*equal contribution; [#]corresponding author)

16. **Pusapati GV*,** Kong JH*, Patel BB, Gouti M, Sagner A, Sircar R, Luchetti G, Ingham PW, Briscoe J, Rohatgi R. G protein-coupled receptors control the sensitivity of cells to the morphogen Sonic Hedgehog. *Sci Signal*. 2018 11: eaao5749 (*equal contribution)

17. Hong SR, Wang CL, Huang YS, Chang YC, Chang YC, **Pusapati GV** *et al.* Spatiotemporal manipulation of ciliary glutamylation reveals its roles in intraciliary trafficking and Hedgehog signaling. *Nat Commun*. 2018 9:1732

18. Patel BB, Lebensohn AM, **Pusapati GV**, Carette JE, Salzman J, Rohatgi R. Discovery of gene regulatory elements through a new bioinformatics analysis of haploid genetic screens. *PLoS One*. 2019 14:e0198463

19. Kinnebrew M, Iverson EJ, Patel BB, **Pusapati GV**, Kong JH, Johnson KA, Luchetti G, Eckert KM, McDonald JG, Covey DF, Siebold C, Radhakrishnan A, Rohatgi R. Cholesterol accessibility at the ciliary membrane controls hedgehog signaling. *eLife*. 2019 8: e50051.

20. Dubey R, van Kerkhof P, Jordens I, Malinauskas T, **Pusapati GV**, McKenna JK, Li D, Carette JE, Ho M, Siebold C, Maurice M, Lebensohn AM, Rohatgi R. R-spondins engage heparan sulfate proteoglycans to potentiate WNT signaling. *eLife*. 2020 9:e54469.

Publications continued

21. Kong JH*, Young CB*, **Pusapati GV***, Patel C, Ho S, Krishnan A, Lin JI, Devine W, de Bellaing AM, Athni TS, L. Aravind, Gunn TM, Lo CW, Rohatgi R. A membrane-tethered ubiquitination pathway regulates Hedgehog signaling and heart development. *Dev Cell.* 2020 55:432-449 (*equal contribution)

22. Bosakova M, Abraham SP, Nita A, Hruba E, Buchtova M, Taylor SP, Duran I, Martin J, Svozilova K, Barta T, Varecha M, Balek L, Kohoutek J, Radaszkiewicz T, **Pusapati GV** *et al.* Mutations in GRK2 cause Jeune syndrome by impairing Hedgehog and canonical Wnt signaling. *EMBO Mol Med.* 2020 12:e11739

23. Kong JH, Young CB, **Pusapati GV**, Espinoza FH, Patel CB, Beckert F, Ho S, Patel BB, Gabriel GC, Aravind L, Bazan JF, Gunn TM, Lo CW, Rohatgi R. Gene-teratogen interactions influence the penetrance of birth defects by altering Hedgehog signaling strength. *Development* 2021 148:dev199867.

24. Ma M, Dubey R, Jen A, **Pusapati GV**, Singal B, Shishkova E, Overmyer KA, Cormier-Daire V, Fedry J, Aravind L, Coon JJ, Rohatgi R. Regulated N-glycosylation controls chaperone function and receptor trafficking. *Science* 2024 386:667-672

25. Khandwala CB, Sarkar P, Schmidt HB, Ma M, **Pusapati GV**, Lamoliatte F, Kinnebrew M, Patel BB, Tillo D, Lebensohn AM, Rohatgi R. Direct ionic stress sensing and mitigation by the transcription factor NFAT5. *Sci Adv.* 2025 11:eadu3194

References

Rajat Rohatgi, M.D., Ph.D.
Professor, Department of Biochemistry
Stanford University
Stanford, United States
Phone: +1 650 723 6167
e-mail: rrohatgi@stanford.edu

Suzanne Pfeffer, Ph.D.
Professor, Department of Biochemistry
Stanford University
Stanford, United States
Phone: +1 650 723 6169
e-mail: pfeffer@stanford.edu

Thomas Seufferlein, M.D.
Director, Department of Internal Medicine I
University of Ulm
Ulm, Germany
Phone: +49 731 500 44500
e-mail: thomas.seufferlein@uniklinik-ulm.de