

Pulmonary and Critical Care Medicine Fellowship Faculty Publications

2023

Girgis, Reda; Hadley, Ryan; Murphy, Edward. Pulmonary, Circulatory and Renal Considerations in the Early Post-operative Management of the Lung Transplant Recipient. *Global Cardiology Science and Practice* 2023. Accepted for publication.

Faisal Khan, Joseph Seaman, Tina D Hunter, Diogo Ribeiro, Balaji Laxmanan, Iftekhar Kalsekar, **Gustavo Cumbo-Nacheli**, Diagnostic outcomes of robotic-assisted bronchoscopy for pulmonary lesions in a real-world multicenter community setting, 2023 May 9;23(1):161. DOI: 10.1186/s12890-023-02465-w PMID: 37161376PMCID: PMC10170714

Abdelgied M, Uhl K, Chen OG, Schultz C, Tripp K, **Peraino AM**, Paithankar S, Chen B, **Tamae Kakazu M**, Castillo Bahena A, Jager TE, Lawson C, Chesla DW, Pestov N, Modyanov NN, Prokop J, Neubig RR, Uhal BD, **Girgis RE, Li X**. Targeting ATP12A, a Non-Gastric Proton Pump Alpha Subunit, for Idiopathic Pulmonary Fibrosis Treatment. *Am J Respir Cell Mol Biol*. 2023 Feb 13. doi: 10.1165/rcmb.2022-0264OC. Epub ahead of print. PMID: 36780662.

2022

Cumbo-Nacheli G, Velagapudi RK, Enter M, Egan JP 3rd, Conci D. Robotic-assisted Bronchoscopy and Cone-beam CT: A Retrospective Series. *J Bronchology Interv Pulmonol*. 2022 Oct 1;29(4):303-306. doi: 10.1097/LBR.0000000000000860. Epub 2022 Aug 2. PMID: 35916420; PMCID: PMC9488938.

Ghuneim LJ, Raghuvanshi R, Neugebauer KA, Guzior DV, Christian MH, Schena B, Feiner JM, Castillo-Bahena A, Mielke J, **McClelland M**, Conrad D, Klapper I, Zhang T, Quinn RA. Complex and unexpected outcomes of antibiotic therapy against a polymicrobial infection. *ISME J*. 2022 Sep;16(9):2065-2075. doi: 10.1038/s41396-022-01252-5. Epub 2022 May 21. PMID: 35597889; PMCID: PMC9381758.

Ortiz-Reyes L, Patel JJ, Jiang X, Coz Yataco A, Day AG, Shah F, Zelten J, **Tamae-Kakazu M**, Rice T, Heyland DK. Early versus delayed enteral nutrition in mechanically ventilated patients with circulatory shock: a nested cohort analysis of an international multicenter, pragmatic clinical trial. *Crit Care*. 2022 Jun 9;26(1):173. doi: 10.1186/s13054-022-04047-4. PMID: 35681220; PMCID: PMC9185884.

Munroe E, Claar D, **Tamae-Kakazu M**, Tatem G, Blamoun J, McSparron JI, Prescott HC. Hospital Policies on Intravenous Vasopressor Administration and Monitoring: A Survey of Michigan Hospitals. *Ann Am Thorac Soc*. 2022 May 24. doi: 10.1513/AnnalsATS.202203-197RL. Epub ahead of print. PMID: 35608405.

Cumbo-Nacheli, G., Colt, H., Agrawal, A., Cicienia, J., Corbetta, L., Goel, A. D., Goga, A., Lee, H. J., Murgu, S., Pannu, J., Senitko, M., Tarantini, F., Vujacich, P., Williamson, J., Yap, E., & Lentz, R. J. Bronchoscopy in patients with known or suspected covid-19: Results from the global pandemic sars-cov-2 bronchoscopy database (GPS-bd). *Journal of Bronchology and Interventional Pulmonology*. <https://doi.org/10.1097/LBR.0000000000000805>
Cited By: The Additional Value of Lower Respiratory Tract Sampling in the Diagnosis of COVID-19: A Real-Life Observational Study. Morandi L, Torsani F, Forini G, Tamburrini M, Carnevale A, Pecorelli A, Giganti M, Piattella M, Guzzinati I, Papi A, Contoli M. *Diagnostics (Basel)*. 2022 Sep 29;12(10):2372. doi: 10.3390/diagnostics12102372. PMID: 36292061

2021

Liban Sigua N, **Tamae Kakazu M**. What Is Central Sleep Apnea in Adults? *Am J Respir Crit Care Med*. 2021 Apr 1;203(7):P18-P19. doi: 10.1164/rccm.2037P18. PMID: 33792532.

Chami HA, Diaz-Mendoza J, Chua A, Duggal A, Jenkins AR, Knight SL, Patolia S, **Tamae-Kakazu M**, Raghu G, Wilson KC. Transbronchial Biopsy and Cryobiopsy in the Diagnosis of Hypersensitivity Pneumonitis among Patients with Interstitial Lung Disease. *Ann Am Thorac Soc*. 2021 Jan;18(1):148-161.

Jenkins AR, Chua A, Chami H, Diaz-Mendoza J, Duggal A, Knight S, Patolia S, **Tamae-Kakazu M**, Raghu G, Wilson KC. Questionnaires or Serum Immunoglobulin G Testing in the Diagnosis of Hypersensitivity Pneumonitis among Patients with Interstitial Lung Disease. *Ann Am Thorac Soc*. 2021 Jan;18(1):130-147.

Gustavo Cumbo-Nacheli 1, Diego Conci 1, James Smith 2. Negative Pressure Aerosol Chamber: A Portable Barrier Device for Bronchoscopy. PMID: 33332849 PMCID: PMC7742215 DOI: 10.1097/LBR.0000000000000695

Ravi Kanth Velagapudi1 & John P. Egan III2. Thoracic Endometriosis: a Clinical Review and Update of Current and Evolving Diagnostic and Therapeutic Techniques. *Current Pulmonology Reports* (2021) 10:22–29. Accepted: 13 January 2021/ Published online: 9 February 2021. <https://doi.org/10.1007/s13665-021-00269-z>

2020

Navarrete R, **Cumbo-Nacheli G**. Usefulness of Pulmonary Artery Catheter in the Evaluation of Alveolopleural Fistulas. *Arch Bronconeumol* 2020 Oct 22;S0300-2896(20)30386-0.

Pritchett M, **Cumbo-Nacheli G**; et al. Society for Advanced Bronchoscopy Consensus Statement and Guidelines for bronchoscopy and airway management amid the COVID-19 pandemic. *J Thorac Dis* 2020. <http://dx.doi.org/10.21037/jtd.2020.04.32>

A Look into the Future of Cone-Beam Computed Tomography Assisted Electromagnetic Navigational Bronchoscopy **D. Geriani, G. Cumbo-Nacheli**, R. Chhaya; Pulmonary and Critical Care, Spectrum Health, Grand Rapids, MI, United States
[ajrccm-conference.2020.201.1_MeetingAbstracts.A6805\(atsjournals.org\)](http://ajrccm-conference.2020.201.1_MeetingAbstracts.A6805(atsjournals.org))

Rello J, Belliato M, Dimopoulos MA, Giamarellos-Bourboulis EJ, Jaksic V, Martin-Loeches I, Mporas I, Pelosi P, Poulakou G, Pournaras S, **Tamae-Kakazu M**, Timsit JF, Waterer G, Tejada S, Dimopoulos G. Update in COVID-19 in the intensive care unit from the 2020 HELLENIC Athens International symposium. *Anaesth Crit Care Pain Med*. 2020 Dec;39(6):723-730.

Patolia S, **Tamae Kakazu M**, Chami HA, Chua A, Diaz-Mendoza J, Duggal A, Jenkins AR, Knight SL, Raghu G, Wilson KC. Bronchoalveolar Lavage Lymphocytes in the Diagnosis of Hypersensitivity Pneumonitis among Patients with Interstitial Lung Disease. *Ann Am Thorac Soc*. 2020 Nov;17(11):1455-1467.

Bai C, Chotirmall SH, Rello J, Alba GA, Ginns LC, Krishnan JA, Rogers R, Bendstrup E, Burgel PR, Chalmers JD, Chua A, Crothers KA, Duggal A, Kim YW, Laffey JG, Luna CM, Niederman MS, Raghu G, Ramirez JA, Riera J, Roca O, **Tamae-Kakazu M**, Torres A, Watkins RR, Barrecheguren M, Belliato M, Chami HA, Chen R, Cortes-Puentes GA, Delacruz C, Hayes MM, Heunks LMA, Holets SR, Hough CL, Jagpal S, Jeon K, Johkoh T, Lee MM, Liebler J, McElvaney GN, Moskowitz A, Oeckler RA, Ojanguren I, O'Regan A, Pletz MW, Rhee CK, Schultz MJ, Storti E, Strange C, Thomson CC, Torriani FJ, Wang X, Wuyts W, Xu T, Yang D, Zhang Z, Wilson KC. Updated guidance on the management of COVID-19: from an American Thoracic Society/European Respiratory Society coordinated International Task Force (29 July 2020). *Eur Respir Rev*. 2020 Oct 5;29(157):200287.

Raghu G, Remy-Jardin M, Ryerson CJ, Myers JL, Kreuter M, Vasakova M, Bargagli E, Chung JH, Collins BF, Bendstrup E, Chami HA, Chua AT, Corte TJ, Dalphin JC, Danoff SK, Diaz-Mendoza J, Duggal A, Egashira R, Ewing T, Gulati M, Inoue Y, Jenkins AR, Johannson KA, Johkoh T, **Tamae-Kakazu M**, Kitaichi M, Knight SL, Koschel D, Lederer DJ, Mageto Y, Maier LA, Matiz C, Morell F, Nicholson AG, Patolia S, Pereira CA, Renzoni EA, Salisbury ML, Selman M, Walsh SLF, Wuyts WA, Wilson KC. Diagnosis of Hypersensitivity Pneumonitis in Adults. An Official ATS/JRS/ALAT Clinical Practice Guideline. *Am J Respir Crit Care Med*. 2020 Aug 1;202(3):e36-e69.

[Diagnosis of Hypersensitivity Pneumonitis in Adults: An Official ATS/JRS/ALAT Clinical Practice Guideline](#)

Raghu G; Document S; Remy-Jardin M; Ryerson CJ; Myers JL; Kreuter M; Vasakova M; Bargagli E; Chung JH; Collins BF; Bendstrup E; Cham HAI; Chua AT; Corte TJ; Jean- Dalphin C; Danoff SK; Diaz-Mendoza J; Duggal A; Egashira R; Ewing T; Gulati M; Inoue Y; Jenkins AR; Johannson KA; Johkoh T; **Tamae-Kakazu M**; Kitaichi M; Knight SL; Koschel D; Lederer DJ; Mageto Y; Maier LA; Matiz C; Morell F; Nicholson AG; Patolia S; Pereira CA; Renzoni EA; Salisbury ML; Selman M; Walsh SLF; Wuyts WA; Wilson KC. Diagnosis of Hypersensitivity Pneumonitis in Adults: An Official ATS/JRS/ALAT Clinical Practice Guideline [published online ahead of print, 2020 Jul 24]. *Am J Respir Crit Care Med*. 2020;10.1164/rccm.202005-2032ST. doi:10.1164/rccm.202005-2032ST

[The Effect of Hospital Discharge with Empiric Noninvasive Ventilation on Mortality in Hospitalized Patients with Obesity Hypoventilation Syndrome. An Individual Patient Data Meta-Analysis.](#)

Mokhlesi B, Masa JF, Afshar M, Almadana Pacheco V, Berlowitz DJ, Borel JC, Budweiser S, Carrillo A, Castro-Añón O, Ferrer M, Gagnadoux F, Golpe R, Hart N, Howard ME, Murphy PB, Palm A, Perez de Llano LA, Piper AJ, Pépin JL, Priou P, Sánchez-Gómez JF, Soghier I, **Tamae Kakazu M**, Wilson KC. *Ann Am Thorac Soc*. 2020 May;17(5):627-637. doi: 10.1513/AnnalsATS.201912-887OC. *Ann Am Thorac Soc*. 2020.PMID: 32023419

[Weight Loss Interventions as Treatment of Obesity Hypoventilation Syndrome. A Systematic Review.](#)

Kakazu MT, Soghier I, Afshar M, Brozek JL, Wilson KC, Masa JF, Mokhlesi B. *Ann Am Thorac Soc*. 2020 Apr;17(4):492-502. doi: 10.1513/AnnalsATS.201907-554OC. *Ann Am Thorac Soc*. 2020.PMID: 31978317

[The Role of Positive Airway Pressure Therapy in Adults with Obesity Hypoventilation Syndrome. A Systematic Review and Meta-Analysis.](#)

Afshar M, Brozek JL, Soghier I, **Kakazu MT**, Wilson KC, Masa JF, Mokhlesi B. *Ann Am Thorac Soc*. 2020 Mar;17(3):344-360. doi: 10.1513/AnnalsATS.201907-528OC. *Ann Am Thorac Soc*. 2020.PMID: 31726017

[Society for Advanced Bronchoscopy Consensus Statement and Guidelines for bronchoscopy and airway management amid the COVID-19 pandemic](#)

Pritchett MA, Oberg CL, Belanger A, De Cardenas J, Cheng G, **Cumbo Nacheli G**, Franco-Paredes C, Singh J, Toth J, Zgoda M, Folch E. *J Thorac Dis* 2020. doi: 10.21037/jtd.2020.04.32

Indoor Particulate Matter From Smoker Homes Induces Bacterial Growth, Biofilm Formation, and Impairs Airway Antimicrobial Activity. A Pilot Study.

Stapleton EM, Manges R, Parker G, Stone EA, Peters TM, Blount RJ, Noriega J, **Li X**, Zabner J, Polgreen PM, Chipara O, Herman T, Comellas AP. *Front Public Health*. 2020 Jan 24;7:418. doi: 10.3389/fpubh.2019.00418. eCollection 2019. PMID: 32039129 **Free PMC article.**

Chhaya Ronak1*, Lam Geoffrey T2, Egan III, John P3 and **Cumbo-Nacheli Gustavo3**. The Use of Robotic Bronchoscopy for Visceral Pleural. Marking Prior to Surgical Resection of Pulmonary Nodules Volume 10:4,2020. DOI: 0.4172/2161-105X.10.502

ICU admission body composition: skeletal muscle, bone, and fat effects on mortality and disability at hospital discharge-a prospective, cohort study.

Jaitovich A, Dumas CL, Itty R, Chieng HC, **Khan MMHS**, Naqvi A, Fantauzzi J, Hall JB, Feustel PJ, Judson MA. *Crit Care*. 2020 Sep 21;24(1):566. doi: 10.1186/s13054-020-03276-9. PMID: 32958059

2019

Chhaya R, **Egan J**, **Cumbo-Nacheli G**. Metastatic pulmonary angiosarcoma presenting with diffuse alveolar hemorrhage: a rare complication of a rare disease. *Chest* 2019. 156:4, A269. doi.org/10.1016/j.chest.2019.08.325

Evaluation and Management of Obesity Hypoventilation Syndrome. An Official American Thoracic Society Clinical Practice Guideline.

Mokhlesi B, Masa JF, Brozek JL, Gurubhagavatula I, Murphy PB, Piper AJ, Tulaimat A, Afshar M, Balachandran JS, Dweik RA, Grunstein RR, Hart N, Kaw R, Lorenzi-Filho G, Pamidi S, Patel BK, Patil SP, Pépin JL, Soghier I, **Tamae Kakazu M**, Teodorescu. *Am J Respir Crit Care Med*. 2019 Aug 1;200(3):e6-e24. doi: 10.1164/rccm.201905-1071ST. *Am J Respir Crit Care Med*. 2019. PMID: 31368798

Noninvasive Ventilation versus CPAP as Initial Treatment of Obesity Hypoventilation Syndrome.

Soghier I, Brozek JL, Afshar M, **Tamae Kakazu M**, Wilson KC, Masa JF, Mokhlesi B. *Ann Am Thorac Soc*. 2019 Oct;16(10):1295-1303. doi: 10.1513/AnnalsATS.201905-380OC. *Ann Am Thorac Soc*. 2019. PMID: 31365842

Polysomnography Parameters Assessing Gas Exchange Best Predict Postoperative Respiratory Complications Following Adenotonsillectomy in Children With Severe OSA.

Molero-Ramirez H, **Tamae Kakazu M**, Baroody F, Bhattacharjee R. *J Clin Sleep Med*. 2019 Sep 15;15(9):1251-1259. doi: 10.5664/jcsm.7914. *J Clin Sleep Med*. 2019. PMID: 31538596

Robot-assisted bronchoscopy for pulmonary lesion diagnosis: results from the initial multicenter experience.

Chaddha U, Kovacs SP, Manley C, Hogarth DK, **Cumbo-Nacheli G**, Bhavani SV, Kumar R, Shende M, Egan JP 3rd, Murgu S. Chaddha U, et al. *BMC Pulm Med*. 2019 Dec 11;19(1):243. doi: 10.1186/s12890019-1010-8. *BMC Pulm Med*. 2019. PMID: 31829148 **Free PMC article.** Clinical Trial.

ICU Admission Muscle and Fat Mass, Survival, and Disability at Discharge: A Prospective Cohort Study.

Jaitovich A, **Khan MMHS**, Itty R, Chieng HC, Dumas CL, Nadendla P, Fantauzzi JP, Yucel RM, Feustel PJ, Judson MA. *Chest*. 2019 Feb;155(2):322-330. doi: 10.1016/j.chest.2018.10.023. Epub 2018 Oct 28. *Chest*. 2019. PMID: 30392790 **Free PMC article.** Clinical Trial.

2018

Individualizing immunosuppression in lung transplantation.

McDermott JK, **Girgis RE**. *Glob Cardiol Sci Pract*. 2018 Mar 14;2018(1):5. doi:

10.21542/gcsp.2018.5.Glob Cardiol Sci Pract. 2018.PMID: 29644232**Free PMC article**.Review.

Lung transplantation in idiopathic pulmonary fibrosis.

Kumar A, Kapnadak SG, **Girgis RE**, Raghu G.Kumar A. Expert Rev Respir Med. 2018 May;12(5):375385. doi: 10.1080/17476348.2018.1462704. Epub 2018 Apr 20.Expert Rev Respir Med. 2018.PMID: 29621919Review.

The impact of ambrisentan and tadalafil upfront combination therapy on cardiac function in scleroderma associated pulmonary arterial hypertension patients: cardiac magnetic resonance feature tracking study. Sato T, Ambale-Venkatesh B, Lima JAC, Zimmerman SL, Tedford RJ, Fujii T, Hulme OL, Pullins EH, Corona-Villalobos CP, Zamanian RT, Minai OA, **Girgis RE**, Chin K, Khair R, Damico RL, Kolb TM, Mathai SC, Hassoun PM. Pulm Circ. 2018 Jan-Mar;8(1):2045893217748307. doi: 10.1177/2045893217748307. Epub 2017 Dec 18.Pulm Circ. 2018.PMID: 29251556**Free PMC article**.

Improvement in Right Ventricular Strain with Ambrisentan and Tadalafil Upfront Therapy in Scleroderma[https://urldefense.com/v3/https://pubmed.ncbi.nlm.nih.gov/28661697/;!!DQv46r5x2oY!akoyhSllfF7WmCNrvFr0IsmXxUCF3ng2qg-xnCR5eQH0Jlc_QYqDAjkAmTgErK-GHUJP53CIWzq7eg\\$](https://urldefense.com/v3/https://pubmed.ncbi.nlm.nih.gov/28661697/;!!DQv46r5x2oY!akoyhSllfF7WmCNrvFr0IsmXxUCF3ng2qg-xnCR5eQH0Jlc_QYqDAjkAmTgErK-GHUJP53CIWzq7eg$)associated Pulmonary Arterial Hypertension.

Mercurio V, Mukherjee M, Tedford RJ, Zamanian RT, Khair RM, Sato T, Minai OA, Torres F, **Girgis RE**, Chin K, Damico R, Kolb TM, Mathai SC, Hassoun PM. Am J Respir Crit Care Med. 2018 Feb 1;197(3):388-391. doi: 10.1164/rccm.201704-0789LE.Am J Respir Crit Care Med. 2018.PMID: 28661697**Free PMC article**.Clinical Trial.No abstract available.

Traumatic Expulsion of Tracheal Rings: An Airway Emergency.

Ravid K, Heiser H, Faisal A, **Cumbo-Nacheli G**, Young B, Sethi S, Kumar A. J Bronchology Interv Pulmonol. 2018 Jul;25(3):e34-e36. doi: 10.1097/LBR.0000000000000472. J Bronchology Interv Pulmonol. 2018.PMID: 29944593No abstract available.

Multiple Lung Masses in a Young Woman.

Medarov BI, **Khan MMHS**, Modi A. JAMA. 2018 Nov 27;320(20):2141-2142. doi: 10.1001/jama.2018.14770.JAMA. 2018.PMID: 30347043No abstract available.

Unique Obstacles for Mentorship During Training. **Doyle S**, McCallister J. Chest. 2018 Sep;154(3):734. doi: 10.1016/j.chest.2018.05.045.Chest. 2018.PMID: 30195369No abstract available.

Predictive Utility of Lung Allocation Score for Retransplantation Outcomes.

Doyle S, Hayes D Jr, Stewart WCL, Whitson BA, Tobias JD, Tumin D. Ann Thorac Surg. 2018 Nov;106(5):1525-1532. doi: 10.1016/j.athoracsur.2018.05.085. Epub 2018 Jul 2.Ann Thorac Surg. 2018.PMID: 30369429

Nominal carbonic anhydrase activity minimizes airway-surface liquid pH changes during breathing. Thornell IM, **Li X**, Tang XX, Brommel CM, Karp PH, Welsh MJ, Zabner J. Physiol Rep. 2018 Jan;6(2):e13569. doi: 10.14814/phy2.13569. PMID: 29380953 **Free PMC article**.

2017

Nocturnal Oximetry-based Evaluation of Habitually Snoring Children.

Hornero R, Kheirandish-Gozal L, Gutiérrez-Tobal GC, Philby MF, Alonso-Álvarez ML, Álvarez D, Dayyat EA, Xu Z, Huang YS, **Tamae Kakazu M**, Li AM, Van Eyck A, Brockmann PE, Ehsan Z, Simakajornboon N, Kaditis AG, Vaquerizo-Villar F, Crespo Sedano A, Sans Capdevila O, von Lukowicz M, Terán-Santos J, Del Campo F, Poets CF, Ferreira R, Bertran K, Zhang Y, Schuen J, Verhulst S, Gozal D. Am J Respir Crit Care Med. 2017 Dec 15;196(12):1591-1598. doi: 10.1164/rccm.201705-0930OC.Am J Respir Crit Care Med. 2017.PMID: 28759260**Free PMC article**.

Extracorporeal Membrane Oxygenation as a Bridge to Lung Transplantation in Patients Over Age 70 Years: A Case Report.

Hayanga JA, Murphy E, **Girgis RE**, Jansma S, Khaghani A. Transplant Proc. 2017 Jan-Feb;49(1):218220. doi: 10.1016/j.transproceed.2016.11.025. Transplant Proc. 2017. PMID: 28104142

Impact of a Post-Discharge Integrated Disease Management Program on COPD Hospital Readmissions.

Russo AN, **Sathiyamoorthy G**, Lau C, Saygin D, Han X, Wang XF, Rice R, Aboussouan LS, Stoller JK, Hatipoğlu U. Respir Care. 2017 Nov;62(11):1396-1402. doi: 10.4187/respcare.05547. Epub 2017 Aug 1. Respir Care. 2017. PMID: 28765496

Pirfenidone and Nintedanib for Treatment of Idiopathic Pulmonary Fibrosis.

Sathiyamoorthy G, Sehgal S, Ashton RW. South Med J. 2017 Jun;110(6):393-398. doi: 10.14423/SMJ.0000000000000655. South Med J. 2017. PMID: 28575896 Review.

Controlled Clinical Trials and Real-Life Experience with Pulmonary Rehabilitation.

Sathiyamoorthy G, Lau C, Marlow S, Hatipoğlu U. Am J Respir Crit Care Med. 2017 Sep 15;196(6):796797. doi: 10.1164/rccm.201703-0647LE. Am J Respir Crit Care Med. 2017. PMID: 28423284 No abstract available.

The Assessment of Cough in a Sarcoidosis Clinic Using a Validated Instrument and a Visual Analog Scale.

Judson MA, Chopra A, Conuel E, Koutroumpakis E, Schafer C, Austin A, Zhang R, Cao K, Berry R, **Khan MMHS**, Modi A, Modi R, Jou S, Ilyas F, Yucel RM. Lung. 2017 Oct;195(5):587-594. doi: 10.1007/s00408017-0040-3. Epub 2017 Jul 13. Lung. 2017. PMID: 28707109

Cystic Fibrosis Transmembrane Conductance Regulator Potentiation as a Therapeutic Strategy for Pulmonary Edema: A Proof-of-Concept Study in Pigs.

Li X, Vargas Buonfiglio LG, Adam RJ, Stoltz DA, Zabner J, Comellas AP. Crit Care Med. 2017 Dec;45(12):e1240-e1246. doi: 10.1097/CCM.0000000000002720. PMID: 28953499 **Free PMC article.**