

Supplementary Material

Supplementary Table: Summary of published reports of membranous nephropathy associated with immune checkpoint inhibitor therapy.

Reference	Age, years	Sex	Cancer site	CPIs received	Baseline Scr (mg/dl)	Urine protein-creatinine ratio	ANCA serology	Therapy
Bonilla M et al. (S1)	88	M	Squamous cell cancer of head and neck	Cemiplimab	2.2	11.9	PLA2R Ab positive	Oral corticosteroids and discontinuation of CPIs
Wakabayashi K et al. (S2)	69	M	Lung adenocarcinoma stage 4	Nivolumab	1.02	19	PLA2R Ab negative	Oral corticosteroids and discontinuation of CPIs
Chen M et al. (S3)	74	M	Metastatic lung adenocarcinoma	Tislelizumab	0.9	NA	THSD7A positive, PLA2R Ab negative	Oral corticosteroids and discontinuation of CPIs

Supplemental references:

- S1. Bonilla M, Maturostrakul B, Khan N, Bijol V, Jhaveri KD, Wanchoo R. Phospholipase A2 receptor antibody mediated membranous nephropathy associated with cemiplimab. *Journal of Onco-Nephrology*. 2021;5(1):27-30. doi:10.1177/23993693211004612
- S2. Wakabayashi K, Yamamoto S, Hara S, Okawara M, Teramoto K, Ikeda N, Kusunoki Y, Takeji M. Nivolumab-induced membranous nephropathy in a patient with stage IV lung adenocarcinoma. *CEN Case Rep*. 2022 May;11(2):171-176. doi: 10.1007/s13730-021-00645-3. Epub 2021 Sep 15. PMID: 34524642; PMCID: PMC9061917.
- S3. Chen M, Zhang L, Zhong W, Zheng K, Ye W, Wang M. Case report: THSD7A-positive membranous nephropathy caused by tislelizumab in a lung cancer patient. *Frontiers in Immunology*. 2021 May 10;12:619147.
- S4. Caza TN, Hassen SI, Dvanajscak Z, Kuperman M, Edmondson R, Herzog C, Storey A, Arthur J, Cossey LN, Sharma SG, Kenan DJ. NELL1 is a target antigen in malignancy-associated membranous nephropathy. *Kidney international*. 2021 Apr 1;99(4):967-76
- S5. Sethi S, Debiec H, Madden B, Charlesworth MC, Morelle J, Gross L, Ravindran A, Buob D, Jadoul M, Fervenza FC, Ronco P. Neural epidermal growth factor-like 1 protein (NELL-1) associated membranous nephropathy. *Kidney Int*. 2020 Jan;97(1):163-174.
- S6. Kurien AA, Prema KJ, Walker P, Caza T. Traditional indigenous medicines are an etiologic consideration for NELL1-positive membranous nephropathy. *Kidney International*. 2022 Sep 9.
- S7. Stokes MB, Foster K, Markowitz GS, Ebrahimi F, Hines W, Kaufman D, et al. Development of glomerulonephritis during anti-TNF-alpha therapy for rheumatoid arthritis. *Nephrol Dial Transplant*. (2005) 20:1400–6. doi: 10.1093/ndt/gfh832
- S8. Katz WA, Blodgett RC Jr, Pietrusko RG. Proteinuria in gold-treated rheumatoid arthritis. *Ann Intern Med* 1984; 101:176.
- S9. Sethi S. The Many Faces of NELL1 MN, *Clin Kid J*, 2022; sfac237 <https://doi.org/10.1093/ckj/sfac237>