

Myeloperoxidase

Myeloperoxidase is a [peroxidase](#) enzyme that in humans is encoded by the MPO gene on [chromosome 17](#). MPO is most abundantly expressed in [neutrophil granulocytes](#), and produces hypohalous acids to carry out their antimicrobial activity.

Karimi et al. applied [imaging mass cytometry](#) to characterize the [immunological landscape](#) of 139 [high-grade glioma](#) and 46 [brain metastases](#) tumours from patients. [Single-cell technology](#) analysis of more than 1.1 million cells across 389 high-dimensional [histopathology](#) images enabled the spatial resolution of immune lineages and activation states, revealing differences in [immune landscapes](#) between [primary tumors](#) and [brain metastases](#) from diverse solid [cancers](#). These analyses revealed cellular neighbourhoods associated with survival in patients with [glioblastoma](#), which they leveraged to identify a unique population of [myeloperoxidase](#) (MPO)-positive [macrophages](#) associated with long-term survival. The findings provide insight into the biology of primary and metastatic brain tumours, reinforcing the value of integrating spatial resolution to single-cell datasets to dissect the [microenvironmental](#) contexture of [cancer](#) ¹⁾

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Karimi E, Yu MW, Maritan SM, Perus LJM, Rezanejad M, Sorin M, Dankner M, Fallah P, Doré S, Zuo D, Fiset B, Kloosterman DJ, Ramsay L, Wei Y, Lam S, Alsajjan R, Watson IR, Roldan Urgoiti G, Park M, Brandsma D, Senger DL, Chan JA, Akkari L, Petrecca K, Guiot MC, Siegel PM, Quail DF, Walsh LA. Single-cell spatial [immune landscapes](#) of primary and metastatic brain tumours. Nature. 2023 Feb 1. doi: 10.1038/s41586-022-05680-3. Epub ahead of print. PMID: 36725935.

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