

Resource Summary Report

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[imctools](#)

RRID:SCR_017132

Type: Tool

Proper Citation

imctools (RRID:SCR_017132)

Resource Information

URL: <https://github.com/BodenmillerGroup/imctools>

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Description: Software Python package that implements preprocessing pipeline for imaging mass cytometry data. Can convert IMC raw files to tiff files that are used as inputs into CellProfiler, Ilastik, Fiji etc.

Abbreviations: IMCtools

Synonyms: imaging mass spectrometry tools

Resource Type: software resource, software application, data processing software

Defining Citation: [PMID:29605184](#)

Keywords: preprocessing, pipeline, imaging, mass, cytometry, data, convert, IMC, raw, file, TIFF

Funding: Swiss National Science Foundation ;
SNSF Assistant Professorship grant ;
PhosphonetPPM and MetastasiX SystemsX grant ;
NIDDK UC4 DK108132;
European Research Council ;
Roche Postdoctoral Fellowship

Availability: Free, Available for download, Freely available

Resource Name: imctools

Resource ID: SCR_017132

Alternate URLs: <https://bodenmillergroup.github.io/imctools/build/html/index.html>

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Record Creation Time: 20220129T080333+0000

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Ratings and Alerts

- Used for image processing operation by the Human Islet Research Network community. Contact(s): [Bernd Bodenmiller](#) - Human Islets Research Network <https://hirnetwork.org/>

No alerts have been found for imctools.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 22 mentions in open access literature.

Listed below are recent publications. The full list is available at [dkNET](#) .

Kuett L, et al. (2025) Distant Metastases of Breast Cancer Resemble Primary Tumors in Cancer Cell Composition but Differ in Immune Cell Phenotypes. *Cancer research*, 85(1), 15.

Mayer M, et al. (2025) Deciphering the cellular tumor microenvironment landscape in salivary gland carcinomas using multiplexed imaging mass cytometry. *Journal of experimental & clinical cancer research : CR*, 44(1), 288.

Egozi A, et al. (2023) Single-cell atlas of the human neonatal small intestine affected by necrotizing enterocolitis. *PLoS biology*, 21(5), e3002124.

Lien HE, et al. (2023) Single-cell profiling of low-stage endometrial cancers identifies low epithelial vimentin expression as a marker of recurrent disease. *EBioMedicine*, 92, 104595.

Weeratunga P, et al. (2023) Single cell spatial analysis reveals inflammatory foci of immature neutrophil and CD8 T cells in COVID-19 lungs. *Nature communications*, 14(1), 7216.

Bai Y, et al. (2023) Expanded vacuum-stable gels for multiplexed high-resolution spatial histopathology. *Nature communications*, 14(1), 4013.

Lu P, et al. (2023) IMC-Denoise: a content aware denoising pipeline to enhance Imaging Mass Cytometry. *Nature communications*, 14(1), 1601.

Strotton M, et al. (2023) Multielement Z-tag imaging by X-ray fluorescence microscopy for next-generation multiplex imaging. *Nature methods*, 20(9), 1310.

Märtens K, et al. (2023) Rarity: discovering rare cell populations from single-cell imaging data. *Bioinformatics (Oxford, England)*, 39(12).

van Eijs MJM, et al. (2023) Highly multiplexed spatial analysis identifies tissue-resident memory T cells as drivers of ulcerative and immune checkpoint inhibitor colitis. *iScience*, 26(10), 107891.

Krijgsman D, et al. (2022) MATISSE: An analysis protocol for combining imaging mass cytometry with fluorescence microscopy to generate single-cell data. *STAR protocols*, 3(1), 101034.

Zhang J, et al. (2021) Multiplex imaging reveals the architecture of the tumor immune microenvironment. *Cancer biology & medicine*, 18(4), 949.

Baars MJD, et al. (2021) MATISSE: a method for improved single cell segmentation in imaging mass cytometry. *BMC biology*, 19(1), 99.

Stockton JD, et al. (2021) Complete response to neoadjuvant chemoradiotherapy in rectal cancer is associated with RAS/AKT mutations and high tumour mutational burden. *Radiation oncology (London, England)*, 16(1), 129.

Schlecht A, et al. (2021) Imaging mass cytometry for high-dimensional tissue profiling in the eye. *BMC ophthalmology*, 21(1), 338.

Deng Y, et al. (2021) Helicobacter pylori infection disturbs the tumor immune microenvironment and is associated with a discrepant prognosis in gastric de novo diffuse large B-cell lymphoma. *Journal for immunotherapy of cancer*, 9(10).

Li R, et al. (2021) Characterization of the Tumor Immune Microenvironment in Lung Squamous Cell Carcinoma Using Imaging Mass Cytometry. *Frontiers in oncology*, 11, 620989.

Olaloye OO, et al. (2021) CD16⁺CD163⁺ monocytes traffic to sites of inflammation during necrotizing enterocolitis in premature infants. *The Journal of experimental medicine*, 218(9).

van Maldegem F, et al. (2021) Characterisation of tumour microenvironment remodelling following oncogene inhibition in preclinical studies with imaging mass cytometry. *Nature communications*, 12(1), 5906.

Xie S, et al. (2020) Hyperion imaging system reveals heterogeneous tumor microenvironment of oral squamous cell carcinoma patients at T1N0M0 stage. *Annals of translational medicine*, 8(22), 1513.