Medical Xpress

Minimum information guidelines to avoid an identity crisis in 3D cell cultures

November 5 2021

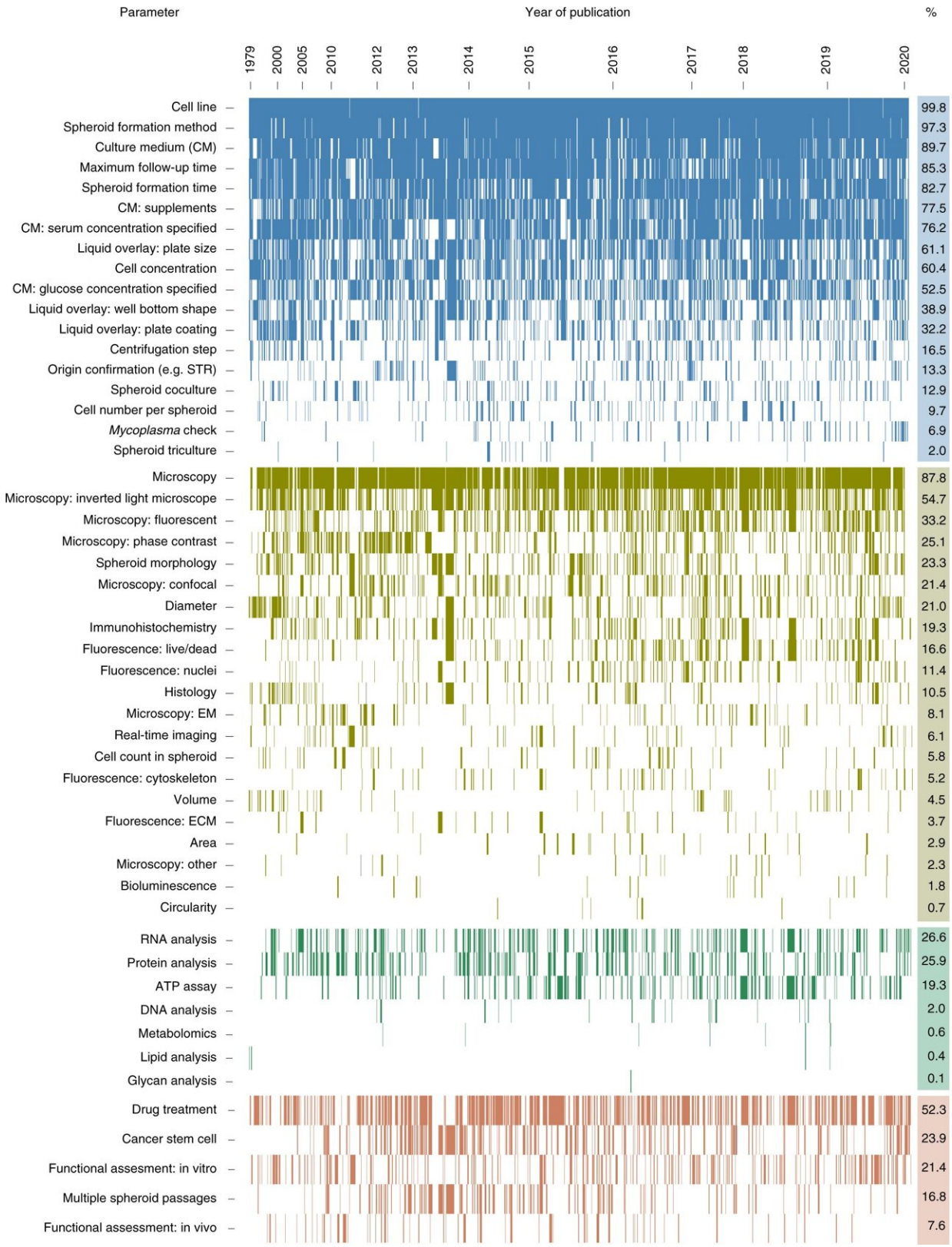

Fig. 1: Mapping the reporting topography in breast cancer spheroid research.

Binary heatmap showing the experimental parameters (rows, 51 of 98 parameters, selected for relevance) of each spheroid experiment (columns, n = 1,628). The heatmap is divided vertically into three sections of parameters ('setup', 'characterization both microscopic and non-microscopic' and 'application'; indicated in blue, light and dark green, and red; and including 18, 21 + 7, and 5 parameters, respectively) and horizontally according to the year of publication. For each section, rows are sorted in descending order according to total number of reported experimental parameters. Parameters that were not reported in an experiment appear as a white space in its corresponding column. The reporting efficiency of each parameter is indicated as a percentage in the right column. EM, electron microscopy; ECM, extracellular matrix. Credit: DOI: 10.1038/s41592-021-01291-4

The increased predictive power of 3D cell culture-based drug development may contribute to a decrease in animal use and a higher success rate of drugs in clinical trials. This is what makes these 3D cell cultures so attractive from ethical and economic perspectives.

Ghent University has developed a method to better compare these 3D cell cultures between labs. Interpretation of data between labs sometimes goes wrong because certain essential data is missing. Ghent University solves this by giving the 3D cell cultures a unique identity card that contains the essential information of such a cell culture. That unique identity card can now be exchanged between different researchers.

The results of this groundbreaking research have been published in the leading journal *Nature Methods*.

More information: Arne Peirsman et al, MISpheroID: a knowledgebase and transparency tool for minimum information in spheroid identity, *Nature Methods* (2021). DOI: 10.1038/s41592-021-01291-4

Provided by Ghent University