Glioblastoma multiforme (GBM), a highly malignant in-
cappable type of brain tumor, has been characterized by a
diverse set of subtypes due to a multitude of analysis
methods. Here, we introduce the MACSima™ Imaging
Platform which allows for fully automated, multipara-
type cyclic immunofluorescence analysis of specimens
and subsequently segmentation, clustering, and correla-
tion of the diverse tumors. The new imaging platform also
showed a high heterogeneity of protein expression,
protein expression patterns were described by distinc-
tive fluorescent markers. The new imaging platform also
showed a high heterogeneity of protein expression.

1. Characterization and classification of glioblastoma multiforme using the novel MACSima™ Imaging Platform

Characterization of different primary glioblastoma tumors

A subpopulation of primary glioblastomas based on
expression patterns determined by immunohistochem-
ical staining with antibody, image acquisition, and the
identification of new glioblastoma-specific markers.

Figure 3 shows representative immunohisto-
chemical staining of four tumors. According to table 1,
glioblastoma 1 and 4 were classified as oligodendrocyte
precur-
riors, whereas glioblastoma 3 and glioblastoma 2 were classified as mixed type.

Identification of new glioblastoma-specific markers

Figure 3 shows representative immunohistochemical
staining of four tumors. According to table 1, glioblastoma 1 and 4 were classified as oligodendrocyte
precursors, whereas glioblastoma 3 and glioblastoma 2 were classified as mixed type.

Conclusion and outlook

• Further correlation and clustering as well as

• Screening of an expanded antibody library led to the identification of new glioblastoma-specific

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