

Editorial

**Editorial: “A New Era in Neuro-Oncology”**

Antonio Meola

Stanford University Hospital and Clinics, Stanford, CA, USA; E-Mail: ameola@stanford.edu

\* **Correspondence:** Antonio Meola; E-Mail: ameola@stanford.edu**Academic Editor:** Bart Ellenbroek**Special Issue:** [Tumors of the Central Nervous System](#)*OBM Neurobiology*

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For several decades, the classification of brain tumors was based on histogenesis. Brain tumors were classified on the basis of their presumed cell of origin and differentiation stage. From a practical viewpoint, the characterization of brain tumors was traditionally based on light field microscopy and, more recently, on immunohistochemical assays and ultrastructural studies.

The 2016 WHO classification of tumors of the central nervous system [1] radically changed the rationale behind brain tumor classification. The 2016 classification is based both on the histological as well as the genetic and molecular features of brain tumors. As a consequence, some neuro-oncological categories were completely restructured, such as glioblastoma, medulloblastoma and embryologic tumors. Moreover, some new neuro-oncological entities were created, while other were removed from the classification. Certainly, our new knowledge about brain tumor biology and the development of modern molecular and genetic tests, allowed transitioning from a purely histological classification of brain tumors to a mixed histological and genetic/molecular classification. The new genetic and molecular features of brain tumors can have a tremendous impact on clinical practice, determining appropriate treatment selection, and patients' prognosis.

In this new era of brain tumors, imaging plays a pivotal role, as well. The recent advancements in imaging techniques (i.e. MR spectroscopy, PET/CT) allow detecting molecular markers of brain



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tumors, which are associated with different histotypes. Thus, imaging will provide the clinician with important information about brain tumor histology, biology and prognosis.

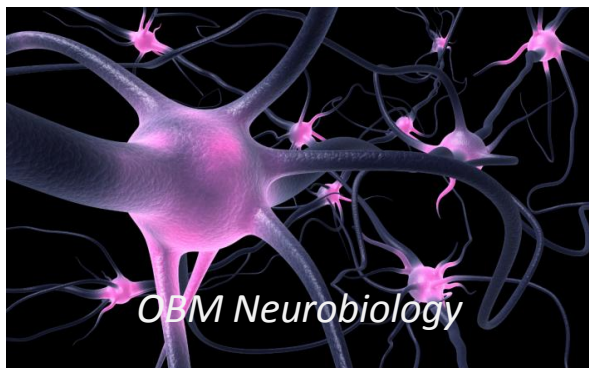
The special issue on “Tumors of the Central Nervous System” of *OBM Neurobiology*, includes several important contributions highlighting contemporary concepts of brain tumor biology derived from novel molecular, genetic and radiological studies.

### Author Contributions

The author did all the research work of this study.

### References

1. Louis DN, Perry A, Reifenberger G, von Deimling A, Figarella-Branger D, Cavenee WK, et al. The 2016 world health organization classification of tumors of the central nervous system: A summary. *Acta Neuropathol.* 2016; 131: 803-820.



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