Journal of Oncology

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Special Issue on

Molecular Crosstalks between the Differentiation, Proliferation, and Cell Death Programs

CALL FOR PAPERS

Spontaneous or induced differentiation of cells from solid tumors such as teratocarcinoma or neuroblastoma and of myeloid leukemias has been recognized for over 50 years; however differentiation therapy did not successfully translate to the clinic for many years. The reasons include the toxic nature of the chemicals used as the differentiation inducers, and the very incomplete understanding of the underlying molecular events. The discovery in the 1980s that treatment of patients with acute promyelocytic leukemia (APL), a subtype of acute myeloid leukemia (AML), with ATRA, an isoform of retinoic acid, can offer a curative option for acute promyelocytic leukemia (APL) raised expectations that a new modality of Differentiation Therapy could become a reality in the field of oncology. This was based on the preclinical demonstration that retinoids can induce differentiation of malignant promyelocytes to granulocytes with a benign phenotype and collaterally promote growth arrest. Other laboratory studies showed that derivatives of vitamin D can induce differentiation of blasts from other subtypes of AML, but attempts to translate this form of induced differentiation therapy to the clinic have so far been unsuccessful. More recently, evidence is accruing that the arrest of cell proliferation in therapeutic cell differentiation also may exhibit components of cell death in its various forms, including cell senescence, apoptosis, and cytotoxic autophagy. High quality manuscripts, which offer advances in our understanding of the molecular basis for these complex cellular program interactions, are therefore invited for this special issue. Mechanistic studies in normal cell systems, as well as hematological malignancies and solid tumors, focused on cell differentiation-associated proliferation and cell death are particularly welcome.

Potential topics include but are not limited to the following:

- Molecular mechanisms of cell cycle arrest in cell differentiation
- Cell death associated with cell differentiation
- Effects of DNA damage on cell differentiation
- Alteration of regulators and executioners of apoptosis in cell differentiation
- Autophagic cell death and differentiation
- Mechanisms of senescence as an outcome of cell differentiation
- Effects of changes in the rate of cell proliferation on the onset of cell death
- Perturbations in the above processes during malignancy

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/jo/mocdp/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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