AGO2 in T-prolymphocytic leukemia (T-PLL)

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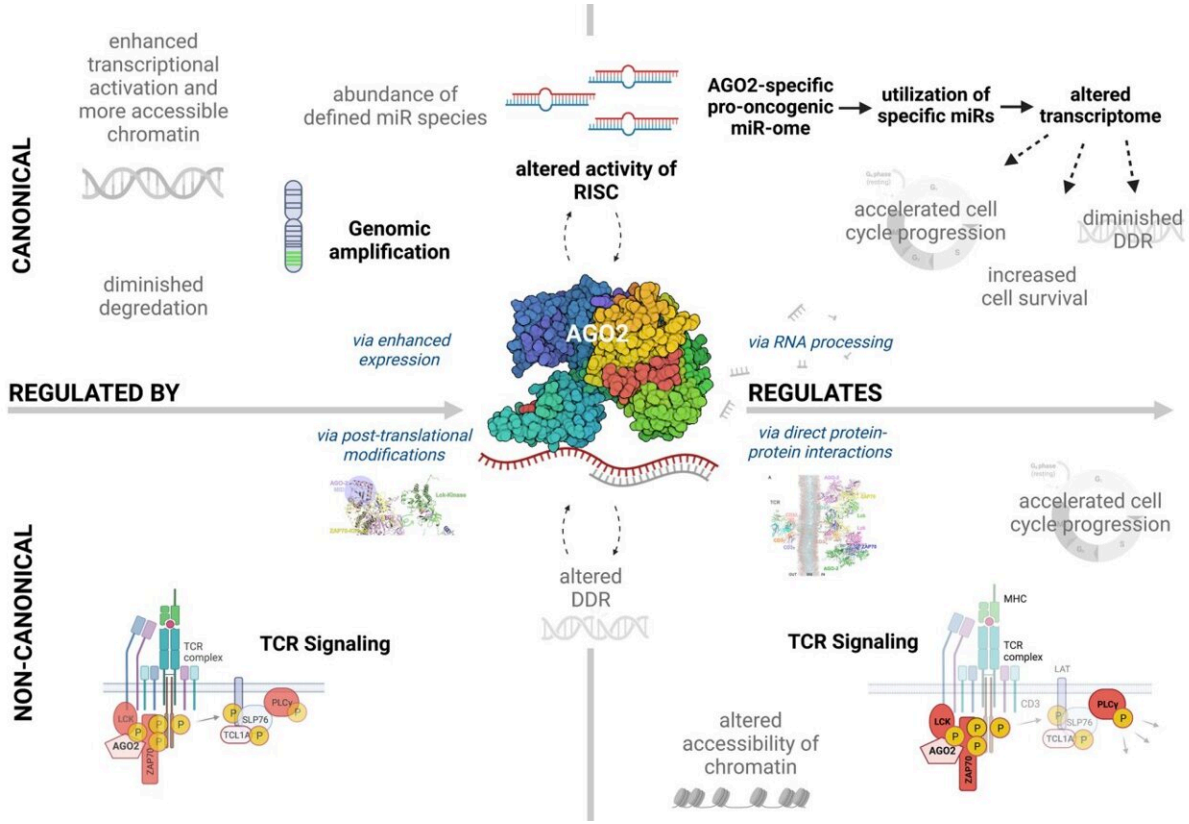

Scheme of mechanisms of AGO2 (de)regulation and its (novel) functions in T-PLL. Credit: *Oncotarget* (2023). DOI: 10.18632/oncotarget.28378

A new editorial paper titled "AGO2 in T-prolymphocytic leukemia: its canonical and noncanonical deregulation and function" has been

published in *Oncotarget*.

In their new editorial, researchers Till Braun, Hanna Klepzig and Marco Herling from University of Cologne and University of Leipzig discuss T-prolymphocytic leukemia (T-PLL)—a mature T-cell neoplasm with an aggressive and treatment-refractory course, stating, "In light of limited therapeutic options, median overall survival times from diagnosis is hardly longer than 2 years."

There is currently no FDA- or EMA-approved drug for the treatment of T-PLL. Although 80–90% of patients experience a response to the most efficient single agent Alemtuzumab, relapses are common within the first 12–24 months following this first-line treatment. One of the defining characteristics of T-PLL is the presence of the chromosomal aberrations inv(14) or t(14;14), which lead to constitutive expression of the proto-oncogene T-cell leukemia 1A (TCL1A).

This adapter molecule is centrally implicated in the enhanced T-cell receptor (TCR) signaling that is observed in the memorytype malignant T-cell. Other recurrent genomic alterations that have been identified in T-PLL affect the genes ataxia telangiectasia mutated (ATM), Janus kinase (JAK), signal transducer and activator of transcription (STAT), and MYC. In a recent study published by Braun et al., the team made significant advances in the understanding of the biology of T-PLL at the level of post-transcriptional gene regulation.

"For the first time, descriptive and mechanistic data implicated the involvement of molecules of the RNA interference (RNAi) machinery in T-PLL's leukemogenesis and by that refined our current disease model by concepts beyond protein-coding genes," the researchers conclude.

More information: Till Braun et al, AGO2 in T-prolymphocytic leukemia: its canonical and non-canonical deregulation and function,

Oncotarget (2023). DOI: 10.18632/oncotarget.28378