TPS3176 **Poster Session**

First in human phase 1 dose escalation and expansion clinical trial to evaluate the safety, pharmacokinetics and antitumor activity of intravenous AROG4-01 in patients with advanced solid tumors.

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Background: AROG4-01 is a synthetic compound with a first-in-class mechanism of action, targeting complex secondary structural elements in mRNA, including G-quadruplexes(G4s). These secondary nucleic acid structures, characterized by Hoogsteen base pairing, play pivotal roles in gene regulation and are abundant in cancer cells due totheir high proliferation rates and dysregulated gene expression patterns. By binding to G4s present in untranslated regions, AROG4-01 modulates gene expression atthe post-transcriptional level, reducing tumor growth and survival. Preclinical studies have demonstrated that AROG4-01 achieves significant antitumor activity,inhibiting cancer cell proliferation, with a strong effect of the compound on inhibit colony formation, evidencing the capacity of AROG4-01 to prevent the long-termsurvival and proliferation of cancer cells. This activity has been validated in vivo across multiple solid cancer models. **Methods:** This study (NCT06652529,EudraCT2024-517569-18) is an open label, Phase 1 dose escalation trial with two expansion cohorts to investigate the safety, tolerability, pharmacokinetics,pharmacodynamics and preliminary antitumor activity of AROG4-01. The study consists of two parts. Part A is a dose escalation that will include 8-20 patients withadvanced solid tumors, covering up to 6 dose levels with the primary objective of determining the safety and tolerability of AROG4-01 and defining an appropriaterecommended phase 2 dose (RP2D) for further evaluation in part B. The study will start with an accelerated-titration dose escalation scheme enrolling one evaluablepatient per cohort for the first 2 dose levels followed by a classic 3+3 design. Part B is a dose expansion, with two cohorts of ten patients: one cohort of patients withadvanced mesothelioma (cohort 1) and a second cohort of patients with other solid tumors (cohort 2). Serum samples collected from patients enrolled in part A whenreceiving the first IMP dose during the first treatment cycle will be used to assess the PK of AROG4-01. Three sites in Spain are expected to participate. Clinical trial information: NCT06652529. Research Sponsor: Applied Research using Omic Sciences.