Single Agent Response Comparisons in a Large-scale, Preclinical Trial of Rare Cancer PDXs by the National Cancer Institute’s Patient-Derived Models Repository (PDMR)

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Summary

The National Cancer Institute’s Patient-Derived Models Repository (NCI PDMR) is a large-scale, preclinical trial for rare cancers (table below against 39 novel Therapeutic Arm arms) testing single agent response in models where a combination response was observed. This study uses n-of-4 therapeutic arms and n-of-12 vehicle control arms. The study is proceeding in three phases as outlined in the figure above: (1) screening phase; (2) Phase 2; if a response is observed; (3) Phase 3 if a response is observed. Here are the results.

Methods Used to Measure Response: single agent repeat studies have been completed for 23 models with this combination. 39 models x 56 combinations = 2184 unique data sets

Set-up for Each Passage

• 10 Donors (Randomized)
• Body weight monitored throughout for toxicity
• Tumor volume monitored weekly
• Tumor size monitoring
• 39 models x 56 combinations = 2184 unique data sets

Phase 3: Testing single agent response in models where a combination response was observed.

Researchers will perform a full efficacy study with planned sampling for the specified combination arms to determine if the response is driven by the combination or only by single agents. There are several models where at least 20 of the combinations have been tested (n=37), the mean number of responsive combinations per model is 7.5 with a range of 2-23.

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Three models have been identified that only responded to 2 combinations each (non-overlapping) one is the Rhabdomyosarcoma NOS, second is the Merkel cell carcinoma and one Neuroendocrine carcinoma (n=7). Four models have 2-3 combinations to date.

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