

objectives include assessment of the pharmacokinetic profile, preliminary efficacy per RECIST 1.1, and immune response.

**Results** N/A

**Conclusions** N/A

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**Ethics Approval** This study was approved by: 1. The Institutional Review Board (IRB) of Stanford University; eProtocol Number: 54928. 2. The IRB of The University of Texas MD Anderson Cancer Center; IRB ID Number: 2020-0185\_MOD001. 3. Western IRB, on behalf of The Angeles Clinic and Research Institute and Henry Ford Health System IRB Office; IRB Tracking Number: 20200758. 4. Bellberry Limited Human Research Ethics Committee, on behalf of Royal North Shore Hospital and Chris O'Brien Lifehouse; Application Number: 2019-10-848.

## REFERENCES

- Mattarollo SR, Loi S, Duret H, Ma Y, Zitvogel L, Smyth MJ. Pivotal role of innate and adaptive immunity in anthracycline chemotherapy of established tumors. *Cancer Res* 2011;**71**:4809–4820.
- Zitvogel L, Galluzzi L, Smyth MJ, Kroemer G. Mechanism of action of conventional and targeted anticancer therapies: reinstating immunosurveillance. *Immunity* 2013;**39**:74–88.

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417

### DESIGN AND RATIONALE OF A PHASE 1 STUDY EVALUATING AMG 256, A NOVEL, TARGETED, IL-21 RECEPTOR AGONIST AND ANTI-PD-1 ANTIBODY, IN PATIENTS WITH ADVANCED SOLID TUMORS

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**Background** Checkpoint inhibitors are a promising therapy for patients with solid tumors; however, many patients require additional therapies to maximize clinical benefit or overcome resistance.<sup>1</sup> The type-1 cytokine interleukin-21 (IL-21) is a promising candidate for combination and has shown clinical activity in melanoma and renal cell cancer.<sup>2</sup> IL-21 has also shown improved efficacy when combined with anti-programmed death (PD)-1 antibodies in preclinical models.<sup>3, 4</sup> AMG 256 is a mutated IL-21 cytokine fused to an anti-PD-1 antibody to combine IL-21 pathway stimulation with checkpoint inhibition—a strategy that is designed to prime and extend the activity of cytotoxic and memory T cells and induce anti-tumor immunity. This first-in-human (FIH) study will assess safety, tolerability, and estimated dosing of AMG 256 monotherapy in patients with advanced solid tumors.

**Methods** This is a FIH, multicenter, non-randomized, open-label, phase 1 study (NCT04362748) of AMG 256 in patients with advanced solid tumors. The planned sample size is approximately 100 patients in two parts: part 1 will evaluate safety, tolerability, pharmacokinetics (PK), pharmacodynamics, and determine the maximum tolerated dose (MTD), part 2 will evaluate the MTD determined in part 1 to further characterize the safety profile and preliminary tumor response. AMG 256 will be delivered by intravenous (IV) infusion. Enrollment criteria include adults with life expectancy of > 3 months, ECOG performance status ≤ 2, histologically or cytologically confirmed metastatic or locally advanced solid tumors not amenable to curative treatment with surgery or radiation, and

at least one measurable lesion ≥ 10 mm that has not undergone biopsy within 3 months of screening scan. Exclusion criteria include primary brain tumor, untreated or symptomatic brain metastases, currently receiving treatment in another investigational device or drug study, or less than 28 days since ending treatment on another investigational device or drug study, history of solid organ transplantation or major surgery within 28 days of study day 1, live vaccine therapy within 4 weeks prior to study day 1, and active infection requiring oral or IV therapy. The primary endpoints are incidence of dose-limiting toxicities and adverse events, MTD, and recommended phase 2 dose. Secondary objectives will evaluate PK parameters, preliminary antitumor activity (objective response, duration of response, progression-free survival, disease control rate, duration of stable disease, overall survival), and immunogenicity of AMG 256 via incidence of anti-AMG 256 antibodies.

**Results** N/A

**Conclusions** N/A

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**Trial Registration** NCT04362748

**Ethics Approval** The study was approved by all institutional ethics boards.

## REFERENCES

- Kluger HM, Tawbi HA, Ascierto ML, et al. Defining tumor resistance to PD-1 pathway blockade: recommendations from the first meeting of the SITC Immunotherapy Resistance Taskforce. *J Immunother Cancer* 2020;**8**:e000398.
- Thompson JA, Curti BD, Redman BG, et al. Phase I study of recombinant interleukin-21 in patients with metastatic melanoma and renal cell carcinoma. *J Clin Oncol* 2008;**26**:2034–2039.
- Lewis KE, Selby MJ, Masters G, et al. Interleukin-21 combined with PD-1 or CTLA-4 blockade enhances antitumor immunity in mouse tumor models. *Oncotarget* 2017;**7**:e1377873.
- Shen S, Sckisel G, Sahoo A, et al. Engineered IL-21 cytokine muteins fused to anti-PD-1 antibodies can improve CD8+ T cell function and anti-tumor immunity. *Front Immunol* 2020;**11**:832.

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418

### A PHASE 1, DOSE ESCALATION AND DOSE EXPANSION STUDY OF SQZ PBMC HPV AS MONOTHERAPY AND IN COMBINATION WITH ATEZOLIZUMAB IN HLA-A\*02+ PATIENTS WITH HPV16+ RECURRENT, OR METASTATIC SOLID TUMORS

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**Background** SQZ-PBMC-HPV is a therapeutic cancer vaccine created with Cell Squeeze<sup>®</sup>, a proprietary cell-engineering system. SQZ-PBMC-HPV is a novel cancer vaccine generated from peripheral blood mononuclear cells (PBMC) squeezed with HPV16 E6 and E7 antigens, resulting in delivery into the cytosol. The resulting antigen presenting cells (APCs) provide enhanced antigen presentation on MHC-I to potentially