

Anti-CDCP1 Antibody-Drug Conjugate for the Treatment of Solid Tumors



Therapeutic Area	Oncology	Indications	Solid Tumors
Modality	Antibody Conjugated	Development Stage	Pre-clinical

Overview

Background

- Over-expression of CUB domain-containing protein 1 (CDCP1) has been associated with multiple solid tumors (e.g., lung, ovary, breast, and kidney)
- CDCP1 interacts with multiple oncogenic signaling pathways, including RAS, EGFR, and Src to promote tumor growth, metastasis, and resistance
- Elevated CDCP1 expression has been correlated with poor outcomes in multiple tumor types
- CDCP1 remains a promising therapeutic target but has been largely unexplored, with only minimal preclinical development

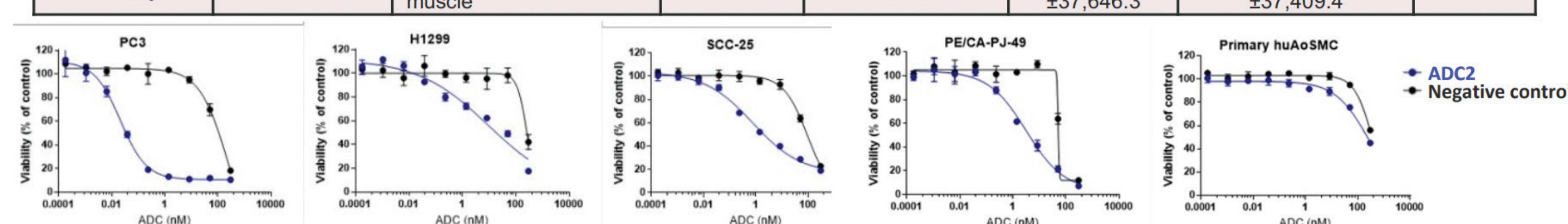
Technology Advantages

- Antibody engineered through extensive phage screening and optimized to improve binding and manufacturing characteristics
- Confirmed in vivo activity in a broad range of solid tumor PDX models with favorable PK/PD
- Anti-CDCP1 hADC was generally well tolerated in Cynomolgus ETS studies

Key Data

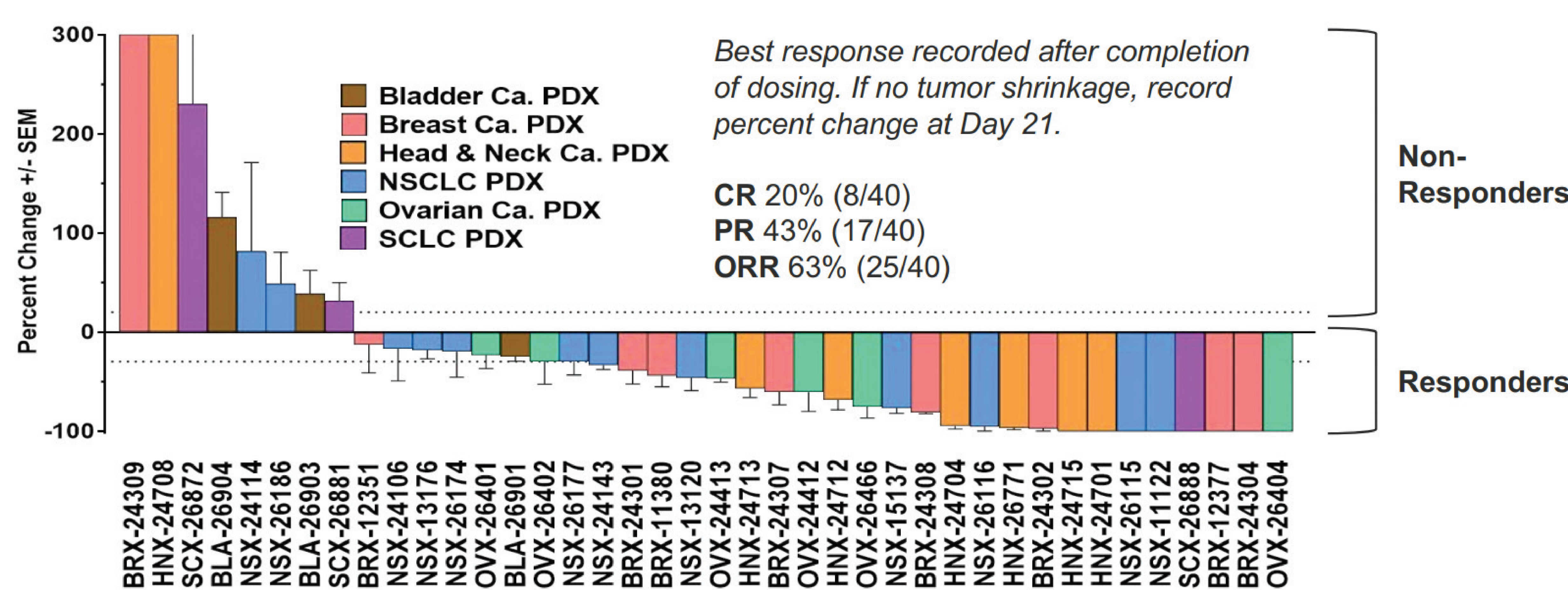
The anti-CDCP1 hADC delivered strong in vitro cytotoxicity against multiple tumor cell lines expressing CDCP1

Cell Category	Cell line	Cell type	Expression level	CDCP1 Receptor number	IC50 (pM)	Negative control IC50 (pM)	n
Tumor	PC3	Prostate cancer	+++	233,567	36.1 ±14.9	126,723.3 ±105006.4	3
Tumor	H1299	NSCLC	++	69,008	9,475.0 ±397.4	249,000 ±12,301.6	2
Tumor	SCC-25	Head and neck cancer	++	51,810	649.4 ±175.8	68,936.7 ±23,083.2	3
Tumor	H2009	Lung adenocarcinoma	++	48,857	754.6 ±284	148,906.7 ±85,391.1	3
Tumor	PE/CA-PJ-49	Oral squamous cell carcinoma	++	24,501	4,192.3 ±2,496.0	66,466.7 ±20,109.0	3
Healthy	HuAoSMC	Primary Aortic smooth muscle	+	12,814	269,266.7 ±37,646.3	301,166.7 ±37,409.4	3



hADC: Humanized Antibody-drug conjugate. NB: The negative control is a non-targeting ADC, which was included to demonstrate induction of cytotoxicity in the absence of antibody-mediated target binding.

The identified anti-CDCP1 hADC demonstrated broad in vivo activity to multiple solid tumor types



CR: Complete response. hADC: Humanized Antibody-drug conjugate. ORR: Overall response rate. PDX: Patient-derived xenograft. PR: Partial response.

IP Status & Publication(s)

Intellectual Property

Patent Number

PCT-US2019-060276 (2019.11.07)

Patent Family

PCT, US, EP, JP, CN, MX, CA, AU

Publication(s)

- Emerling, B. M. et al. (2013). Identification of CDCP1 as a hypoxia-inducible factor 2 α (HIF-2 α) target gene that is associated with survival in clear cell renal cell carcinoma patients. Proceedings of the National Academy of Sciences of the United States of America, 110(9), 3483–3488.
- Benes, C. H. et al. (2011). The SRC-associated protein CUB Domain-Containing Protein-1 regulates adhesion and motility. Oncogene, 31(5), 653–663.