

Predicting on-target, off-tumor toxicity of Solitomab, an EpCAM/CD3 BiTE

An Applied BioMath Assess™ Case Study
Supplementary Materials

EpCAM / CD3 Parameters

	Parameter	Value	Unit	Reference
Tumor compartment	EpCAM+ cell density	5.0E+08	cells/mL	Tumor cell density + assumptions. Del Monte U, <i>Cell Cycle</i> . 2009
	EpCAM expression	114,000	receptors/cell	Brischwein K et al. <i>Molecular Immunology</i> . 2006
	T cell density	1.15E+07	cells/mL	Garcia-Martinez E et al., <i>Breast Cancer Research</i> . 2014
	CD3 expression	62,000	receptors/cell	Thibault and Bardos, <i>Journal of Immunology</i> . 1995
Tox compartment	EpCAM+ cell density	2.5E+08	cells/mL	Based on GI epithelial cell counts.
	EpCAM expression	57,000	receptors/cell	Chen J et al., <i>Clin Proteomics</i> . 2013
	T cell density	6.0E+07	cells/mL	Mahadeva S et al., <i>J Clin Pathol</i> . 2002
	CD3 expression	62,000	receptors/cell	Thibault and Bardos, <i>Journal of Immunology</i> . 1995
	EpCAM half-life	21	hours	Munz M et al. <i>Frontiers in Bioscience</i> . 2008
	CD3 half-life	20	hours	Liu H et al., <i>Immunity</i> . 2000

Solitomab Parameters

Parameter	Value	Unit	Reference
Binding Kd to CD3	77	nM	Brischwein K et al. <i>Molecular Immunology</i> . 2006
Binding Kd to EpCAM	16	nM	Brischwein K et al. <i>Molecular Immunology</i> . 2006
Biological half-life	4.5	hr	Kebenko M et al., <i>OncImmunity</i> . 2018

Additional References

- Crawford, Alison, and Danica Chiu. 2021. “Targeting Solid Tumors Using CD3 Bispecific Antibodies.” *Molecular Cancer Therapeutics* 20 (8): 1350–58.
- Kebenko, Maxim, Marie Elisabeth Goebeler, Martin Wolf, Annette Hasenburg, Ruth Seggewiss-Bernhardt, Barbara Ritter, Beate Rautenberg, et al. 2018. “A Multicenter Phase 1 Study of Solitomab (MT110, AMG 110), a Bispecific EpCAM/CD3 T-Cell Engager (BiTE®) Antibody Construct, in Patients with Refractory Solid Tumors.” *Oncoimmunology*. <https://doi.org/10.1080/2162402X.2018.1450710>.