

Product Sheet



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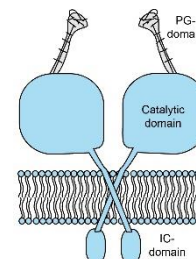
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Carbonic Anhydrase IX (CAIX) / CA9

Catalogue no.: Q29c
Clone name: 1D8

Product: VHH directed against CAIX
Target: The Carbonic Anhydrase IX (CAIX), UniProtKB Q16790), isoform IX of the zinc enzyme carbonic anhydrase (α -CA family), is a single membrane spanning protein that functions as a dimer in pH regulation via the reversible hydration of carbon dioxide. CAIX has a relatively large extracellular domain (377 aa, consisting of a proteoglycan-like (PG) domain and catalytic domain) and small C-terminal intracellular (IC) domain (24 aa). Its expression is under the control of hypoxia-inducible factor 1 α (HIF1 α), causes tumor acidification and is therefore used as one of the markers of hypoxia in tumors.¹⁻⁵



Source: Recombinant monoclonal VHH (Llama glama), purified from *S.cerevisiae* using affinity chromatography. Immunization with HeLa cells grown under hypoxia. Phage-display selection on captured recombinant CAIX with total elution.⁴

Specificity: Human CAIX.⁴

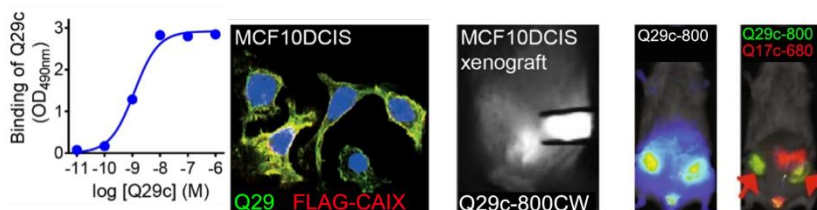
Formulation: 0.2 μ m filtered solution in PBS. The products are equipped with a C-terminal C-Direct tag with an unpaired cysteine for directional conjugation.

Mol. Weight: 14.8 kDa
Ext. Coeff. (ϵ): 31525 M⁻¹ cm⁻¹
A₂₈₀ at 1g/L: 2.1

Storage: Shipped on blue ice. Store at 4 °C or -20 °C (aliquots). Addition of 0.02% sodiumazide is optional.

Applications: ELISA, IF, in vivo imaging

Examples:



Binding of Q29c to CAIX in ELISA. Binding of fluorescently labeled Q29 to CAIX on MCF10DCIS cells. Image guided surgery of CAIX positive tumors in mice using IRDye800CW-labeled Q29c.⁴ Intravital imaging of CAIX- and HER2-positive tumors in mice using IRDye800CW-labeled Q29c and IRDye680RD-labeled Q17c.⁵

References:

- 1 De Simone et al. (2010) *Biochem Biophys Acta*. 1804, 404-409
- 2 Alterio et al. (2009) *PNAS*. 106, 16233-16238
- 3 Bao et al. (2012) *PLoS One*. 7, e50860. doi: 10.1371/journal.pone.0050860
- 4 van Brussel et al. (2016) *Mol Imaging Biol*. 18, 535-544
- 5 Kijanka et al., (2016) *EJNMMI Res*. 6, 14, doi: 10.1186/s13550-016-0166-y