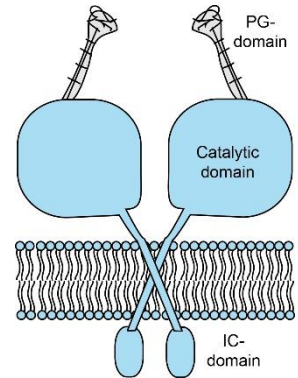


## Anti-Carbonic Anhydrase IX (CAIX) / CA9

**Catalogue no.:** Q25-Q30  
**Clone name:** 1B9, 1C5, 1D8, 1E4  
**Product:** VHH directed against Carbonic Anhydrase IX (CAIX) / CA9

**Target:** The Carbonic Anhydrase IX (CAIX), UniProtKB [Q16790](#), isoform IX of the zinc enzyme carbonic anhydrase ( $\alpha$ -CA family), is a single membrane spanning protein that functions as a dimer in pH regulation via the reversible hydration of carbon dioxide <sup>1</sup>. 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) <sup>2</sup>. Its expression is under the control of hypoxia-inducible factor 1 $\alpha$  (HIF1 $\alpha$ ) <sup>1</sup>, causes tumor acidification and is therefore used as one of the markers of hypoxia in tumors <sup>3-5</sup>.



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

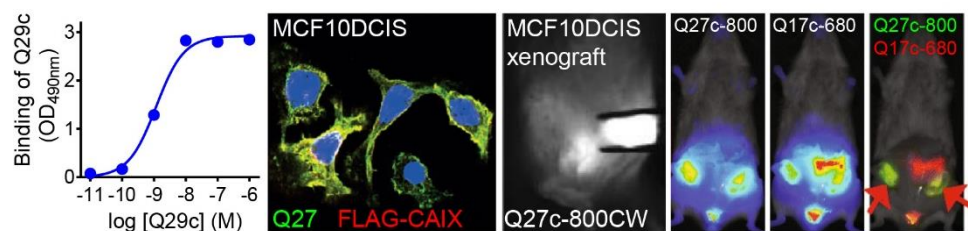
**Specificity:** Human CAIX.

**Formulation:** Frozen 0.2  $\mu$ m filtered solution of VHH in PBS.

**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 Q27 (B9, green) to FLAG-CAIX (red) in MCF10-DCIS cells in IF <sup>4</sup>. Intra-operative detection of CAIX in MCF10-DCIS xenograft in mice using Q27<sup>IRDye800CW</sup> <sup>4</sup>. Dual-spectral *in vivo* imaging of MCF10-DCIS xenografts (red arrows) in mice using CAIX-targeting Q27<sup>IRDye800CW</sup> and HER2-targeting Q17<sup>IRDye680RD</sup> <sup>5</sup>.

**Products:**

Cat. No.	Target	Tag	Label
Q25-Q30	CAIX	Tagless	No label
Q25-Q30c	CAIX	C-direct	No label
Q25-Q30c-lab	CAIX	C-direct	Biotin / NOTA / HiLyte488 / IRDye800CW

**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