

## Anti-HER2 Affibody® Imaging Agent

### Background

The human epidermal growth factor receptor HER2 (Her2/neu, ErbB2, or c-erb-b2) is a growth factor receptor that is expressed on many cell types. HER2-proteins are over-expressed in a number of cancer types and assemble in homo- or heterodimers to form functional signaling units. When over-expressed, homo- or heterodimers of HER2 cause increased proliferation, decreased apoptosis, enhanced tumor cell motility and neo-angiogenesis – all being traits strongly associated with tumor formation. Thus, the her2 gene is considered an oncogene.

The Anti-HER2 Affibody® imaging agent is highly specific for the extracellular domain of HER2. It targets HER2-expressing tumors *in vivo* in SKOV-3 cells in a xenograft model (see Orlova et al., Cancer Res. 2006 Apr 15;66(8):4339-48). The Anti-HER2 imaging agent is a [V1A][D2E] variant of Z00477.

The Anti-HER2 Affibody® imaging agent is modified with a unique C-terminal cysteine for directed single-point chemical modification, facilitating labeling to thiol reactive reagents, such as various fluorescent dyes.

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### Product information

**Product name:** Anti-HER2 Affibody® imaging agent

**Catalog number:**

100 µg: 10.1861.01.0001

500 µg: 10.1861.01.0005

**Source:** Recombinant protein produced in *E. coli*.

**Specificity:** Anti-HER2 Affibody® molecule binds to extracellular domain of human epidermal growth factor receptor 2 (HER2). Cross reactivity with other species has not been tested.

**MW:** 6.9 kDa

**Theoretical pI:** 8.5

**Purity:** >95% as determined by RP-HPLC analysis.

**Applications:** E.g. small animal imaging.

**Conjugation:** The Affibody® molecule contains a unique C-terminal cysteine ideal for directed chemical modifications. However, tail-to-tail dimers are spontaneously generated via a disulfide bridge between the C-terminal cysteines. Prior to coupling via the C-terminal cysteine, the Affibody® molecule needs to be reduced to expose the reactive cysteine residue. Recommended reducing condition is 20 mM DTT at a pH above 7.5 and incubation at room temperature for 2 hours. Remove excess DTT by passage through a desalting column, not by dialysis.

**Form:** Lyophilized protein. Lyophilized from 10 mM  $\text{NH}_4\text{HCO}_3$ .

**Storage:** +4°C is recommended for lyophilized protein. For reconstituted protein in physiological buffer, short-term storage at +4°C is recommended. For long-term storage, the protein solution should be aliquoted and then stored at -20°C.

**Shipping:** At ambient temperature.

**Stability:** There is no decrease in performance of the reconstituted Affibody® molecule (1 mg/ml in PBS) after 10 repeated freeze and thaw cycles or after storage for 2 weeks at room temperature.

### LIMITATIONS

Warranty: Affibody® products are warranted to meet stated product specifications and to confirm to label descriptions when used and stored properly. Unless otherwise stated, this warranty is limited to one year from date of sales for products used, handled and stored according to Affibody AB's instructions. Affibody AB's sole liability is limited to replacement of the product or refund of the purchase price. Affibody® products are supplied for research use only. They are not intended for medicinal, diagnostic or therapeutic use. Affibody® products may not be resold, modified for resale or used to manufacture commercial products without prior written approval from Affibody AB.