ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

HER 2 peptide

Cat #HER2-597-P HER2 peptide, cyclic, (597-626, cys- cys disulphide bond) vaccine candidate; antigen grade **Size: 5 mg**

HER2 (Neu /ErbB-2/CD340/ p185) is a member of the epidermal growth factor receptor (EGFR/ErbB) family of receptor tyrosine kinases. It is an onco protein that is over expressed in 20-30% of breast cancers. It has an extra cellular domain (1-652 a.a), a transmembrane domain (653-675 a.a) and an intra cellular domain (676 – 1255 a.a). In patients with HER2-overexpressing tumors, different studies have shown cellular and/or humoral immune responses against HER2 in early stages of the disease Immunological tolerance against HER2 antigen represents a barrier to effective vaccination.

Peptide vaccines contain antigenic epitopes derived from Her2 domains for the induction of peptide-specific immune regulators (antibodies, helper T-cells and cytotoxic T lymphocytes). Numerous clinical trials have been conducted using various peptide preparations, with or without adjuvants.

These peptides are derived from regions in the extracellular domain of Her2 that mediate the ag-ab interaction. They are designed to mimic the ECD of her 2 that contact trastuzumab. They contain native disulphide bond and at least one region of the 3 binding sequences that make contact with trastuzumab.

The three-dimensional structure of human HER-2 in complex with trastuzumab reveals that the Ag-binding region of HER-2 spans residues 563-626 that comprises an extensive disulfide-bonding pattern. Peptides are derived from this region designed to mimic the ECD of her 2 that contact trastuzumab. They contain native disulphide bond and at least one region of the 3 binding sequences that make contact with trastuzumab.

HER2-597-P is a cyclic peptide (a.a 597-626) derived from this region. It contains a disulphide bond. The last a.a cys is mutated to Leu so as to prevent interference with natural disulphide formation. Research has shown that this peptide was recognized by trastuzumab and prevented the function of trastuzumab inhibiting tumor cell proliferation. Immunization with the 597-626 epitope significantly reduced tumor burden in transgenic BALB-neuT mice.

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Sequence	**VARCPSGVKPDLSYMPIWKFPDEEGACQPL**
	cys 600- cys 623, Disulphide bond
Avg. mass	333.2
Purity	>95%
Form and storage	Powder. Store at -20ºC up to 1 year.
Shipping	Shipped at 4º C
Solubility	Not tested

General references:

Garrett JT "Novel engineered trastuzumab conformational epitopes demonstrate in vitro and in vivo antitumor properties against HER-2/neu" J Immunol. 2007 Jun 1;178(11):7120-31.

Related Items

HER2-369-P

HER2-597-P…….050312P

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