Anti-FOLR1 [Farletuzumab (MORAb-003; M3)] Bulk Size Ab03043-3.0-BT

This chimeric mouse antibody was made using the variable domain sequences of the original Human IgG1 format for improved compatibility with existing reagents assays and techniques.

Isotype and Format: Mouse IgG2b, Kappa
Clone Number: Farletuzumab (MORAb-003; M3)
Alternative Name(s) of Target: FRA; Frα; Fr-α; FBP; LK26; Folate receptor 1; Folate receptor alpha; FR-alpha; Adult folate-binding protein; Ovarian tumor-associated antigen MOv18; KB cells FBP; Folate receptor adult; MOv18
UniProt Accession Number of Target Protein: P15328
Published Application(s): antagonist, functional assay, in vivo, inhibition, neutralizing, ELISA, IHC
Published Species Reactivity: Human, Cynomolgus Monkey
Immunogen: The original parental mouse antibody was generated by immunizing (BALB/c X C57BL/6) F1 mice by intraperitoneal injection containing cultured LU-75(c) choriocarcinoma cells to produce hybridomas that generated the antibody LK26. Later on the Farletuzumab was generated by CDR grafting technique by taking CDRs of mouse parental clone LK26 and grafting them on human framework regions.
Specificity: This antibody binds human folate receptor alpha (FOLR1). FOLR1 binds folate and reduced folic acid derivatives and mediates delivery of 5-methyltetrahydrofolate and folate analogs into the interior of cells by receptor mediated endocytosis. It is required for normal embryonic development and normal cell proliferation. The human folate receptor-alpha (FOLR1) is overexpressed in ovarian cancer but largely absent in normal tissue. It is hypothesized that the presence of elevated levels of FRα can be correlated with the propagation rate and phenotype of the tumors.
Application Notes: This antibody was derived from the optimization of mouse parental LK26 antibody using a whole-cell genetic evolution platform. This antibody possesses growth-inhibitory activity on cells overexpressing FR-alpha. It elicited robust antibody-dependent cellular cytotoxicity (ADCC) and complement-dependent cytotoxicity (CDC) in vitro and inhibited the growth of human ovarian tumor xenografts in nude mice. Immunohistochemistry studies determined that MORAb-003 infrequently stained the tubular epithelium, epithelium of the fallopian tube, and duct epithelium of the pancreas in both normal human and cynomolgus monkey tissues. Cynomolgus monkey was therefore considered an appropriate toxicology model (Ebel et al., 2007; PMID: 17346028). This antibody was also found to antagonize the

activity of human FRα, resulting in the loss of growth advantage conferred by overexpression of FRα under conditions that bracket physiological (10–100 nM) folate concentrations (Routhier et al., 2006; DOI: 10.1200/jco.2006.24.18_suppl.10108). In a human ovarian cancer model, female athymic nude mice implanted with IGROV cells (expressing FRα) were treated with this antibody, Paclitaxel, or a combination of both. This antibody alone reduced tumor growth by approximately 30%, while Paclitaxel alone reduced tumor burden by about 65%. However, the combination of both resulted in greater than 80% growth inhibition (Maddage et al., 2012; DOI: 10.1158/1538-7445.AM2012-4411). A phase I study in patients with platinum-resistant ovarian cancer revealed that MORAb-003 was well tolerated in patients with epithelial ovarian cancers and may have activity in platinum-resistant patients (Konner et al., 2006; DOI: 10.1200/jco.2006.24.18_suppl.5027) (Bell-McGuinn et al., 2007; DOI: 10.1200/jco.2007.25.18_suppl.5553). In a phase 2 trial in patients with platinum-sensitive ovarian cancer, patients received single-agent farletuzumab or farletuzumab combined with carboplatin and paclitaxel (or docetaxel), followed by farletuzumab maintenance until progression. Of the 47 patients who received farletuzumab, 80.9% had normalization of their CA125, and a complete or partial objective response rate was achieved in 75% with combination therapy (Herzog et al., 2016; DOI: 10.1200/JCO.2016.34.15_suppl.TPS5608). It was also reported that farletuzumab with carboplatin and taxane may enhance the response rate and duration of response in platinum-sensitive ovarian cancer patients with first relapse after remission of 6–18 months (Armstrong et al., 2013; PMID: 23474348).

Antibody First Published in: Ebel et al. Preclinical evaluation of MORAb-003, a humanized monoclonal antibody antagonizing folate receptor-alpha. Cancer Immun. 2007; 7: 6. PMID:17346028

Note on publication: Describes the generation of a humanized version of an ani-FOLR1 antibody and tests its ADCC and CDC activity in vitro and in vivo for therapeutic applications.

Product Form

Size: 1 mg Purified antibody in bulk size.

Purification: Protein A affinity purified

Supplied In: PBS only.

Storage Recommendation: Store at 4^{o}C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommed this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20^{o}C.

Concentration: 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.