Anti-human sFlt1-14 (#180F3B4)

20170613BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no.:	**101-M29**
Size:	100 µg
Lot. No.:	According to product label
Country of origin:	Germany

Preparation: This antibody was produced from a hybridoma (mouse myeloma fused with spleen cells from a mouse) immunized with a peptide against a part of the unique C terminal end of sFlt1-14 (DQEAPYLLRNLSDH)

Target Background

Synonyms:	Fms-like tyrosine kinase 1, Vascular permeability factor receptor, sFlt1-14

A human-specific splicing variant of vascular endothelial growth factor (VEGF) receptor 1 (Flt1) was discovered, producing a soluble receptor (designated sFlt1-14) that is qualitatively different from the previously described soluble receptor (sFlt1) and functioning as a potent VEGF inhibitor. sFlt1-14 is generated in a cell type-specific fashion, primarily in non-endothelial cells. Notably, in vascular smooth muscle cells, all Flt1 messenger RNA is converted to sFlt1-14, whereas endothelial cells of the same human vessel express sFlt1. sFlt1-14 expression by vascular smooth muscle cells is dynamically regulated as evidenced by its upregulation on coculture with endothelial cells or by direct exposure to VEGF. Increased production of soluble VEGF receptors during pregnancy is entirely attributable to induced expression of placental sFlt1-14 starting by the end of the first trimester. Expression is dramatically elevated in the placenta of women with preeclampsia, specifically induced in abnormal clusters of degenerative syncytiotrophoblasts known as syncytial knots, where it may undergo further messenger RNA editing. sFlt1-14 is the predominant VEGF-inhibiting protein produced by the preeclamptic placenta, accumulates in the circulation, and hence is capable of neutralizing VEGF in distant organs affected in preeclampsia. Together, these findings revealed a new natural VEGF inhibitor that has evolved in humans, possibly to protect non-endothelial cells from adverse VEGF signaling. Furthermore, the study uncovered the identity of a VEGF-blocking protein implicated in preeclampsia.

References

1. Shay Sela et al, Circ Res 102:1566-1574, 2008
2. Christie P, Clin Endocrinol Metab 94(7):2524–2530, 2009
3. Saunder CA, Int J Mol Sci 16, 12436-12453, 2015
4. Steinberg G, Thromb Res 123 Suppl 2:S93-9, 2009
5. Yagel S, Thromb Res 127 Suppl 3:S64-6, 2011
6. Burke SD, JCI doi:10.1172/JCI83918, 2016

Database References Antigen

Protein RefSeq:	NP_001153502.1
Uniprot ID:	P17948-2
mRNA RefSeq:	NM_0001160030.1

Product Specifications

Species reactivity	human
Clone/Ab feature	#180F3B4; IgG_1
Cross reactivity	n.d.
Host	mouse
Clonality	monoclonal
Purification	Protein G purified
Immunogen	Peptide: DQEAPYLLRNLSDH
Formulation	lyophilized
Buffer	PBS
Preservative	0,02% sodium azide

Warnings: Reagents contain sodium azide. Under acidic conditions sodium azide yields hydrazoic acid, this is extremely toxic. Azide compounds should be diluted with running water before discarding. These precautions are recommended to avoid

Stability: The lyophilized antibody is stable at room temperature for up to 1 month. The reconstituted antibody is stable for at least two weeks at 2-8°C. Frozen aliquots are stable for at least 6 months when stored at -20°C.

Reconstitution: Centrifuge vial prior to opening. Reconstitute in sterile water to a concentration of 0.1-1.0 mg/ml.

AVOID REPEATED FREEZE AND THAW CYCLES!

Applications

Western Blot:	Use at 1-10 µg/ml
ELISA:	Direct ELISA
IF/IHC	Use 1:500-1000

NOTE: OPTIMAL DILUTIONS SHOULD BE DETERMINED BY EACH LABORATORY FOR EACH APPLICATION!

Anti-human sFlt1-14 (#180F3B4)

Handling/Applications

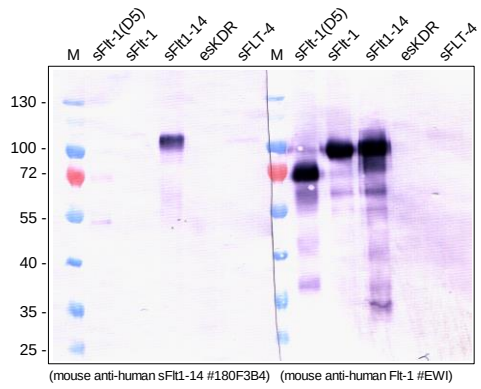

Fig. 1: Western Blot Analysis of recombinant human sFlt-1(D5) [Cat# S01-012], sFlt-1 [Cat# S01-010], sFlt1-14 [Cat# S01-072], sKDR(D7) [Cat# S01-002] and sFLT-4 [Cat# S01-018] using a monoclonal mouse anti-human sFlt1-14 generated against a peptide from the unique C terminal end (left panel) and a monoclonal mouse anti-human Flt-1 [Cat# 101-M30] recognizing all Flt-1 proteins used as control.

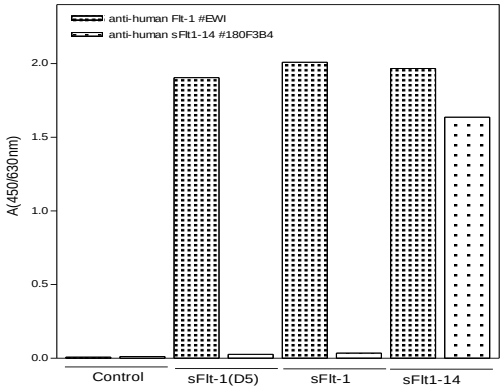

Fig. 2: Direct ELISA: recombinant human sFlt-1(D5) [Cat# S01-012], sFlt-1 [Cat# S01-010] and sFlt1-14 [Cat# S01-072] were coated with 1µg/ml in PBS. The sFlt1-14 specific mouse anti-human sFlt1-14 antibody generated against a peptide from the unique C terminal end was used with 2µg/ml, the Flt-1 specific mouse anti-human Flt-1 #EWI [Cat# 101-M30] recognizing all Flt-1 proteins was used as control [1µ/ml].

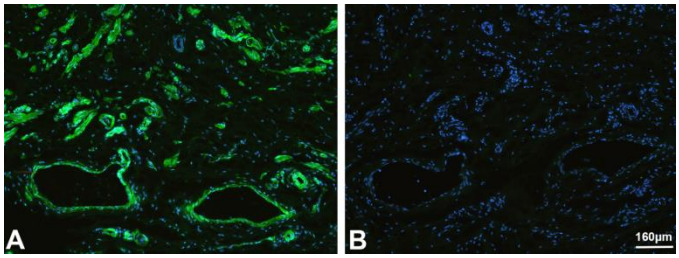

Fig. 3: Immunofluorescence staining (green) of cryo-sections of human foreskin with mouse anti-human sFlt1-14 antibody [Cat# 101-M29] and counter staining of nuclei with Dapi (blue). (B) Control; Fixation: 4% PFA (app. 25min); Dilution: 1:500. Staining in smooth muscle cells, the perineurium of nerves and the Stratum basale of the epidermis as well as some scattered cells.
The experiment was performed by the research group of Prof. Dr. J. Wilting and M. Lohrberg, University Göttingen, Germany.

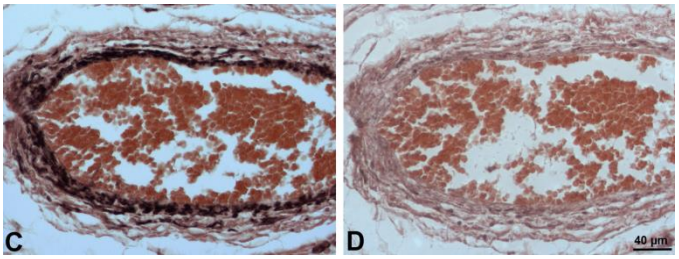

Fig. 4: Immunoperoxidase staining of paraffin-embedded sections of human foreskin with mouse anti-human sFlt1-14 antibody. (D) Control; Fixation: 4% PFA (app. 25min); Dilution: 1:100-500. The staining in smooth muscle cells is visible.
The experiment was performed by the research group of Prof. Dr. J. Wilting and M. Lohrberg, University Göttingen, Germany.