PRODUCT INFORMATION

Human Fibrinogen (PAD2 Citrullinated)

Item No. 18473

Overview and Properties

Source: Fibrinogen, purified from human plasma that has been shown by certified tests to be negative for HBsAg and for antibodies to HIV and HCV. Citrullinated with human recombinant PAD2.

Uncitrullinated Fibrinogen Molecular Weight: α chain isoform 1 (95 kDa), α chain isoform 2 (69.8 kDa), β chain (55.9 kDa), and isoform γ-B chain (51.5 kDa)

Storage: -80°C (as supplied); to avoid clotting, thaw protein slowly on ice and flash freeze in liquid nitrogen if needed.

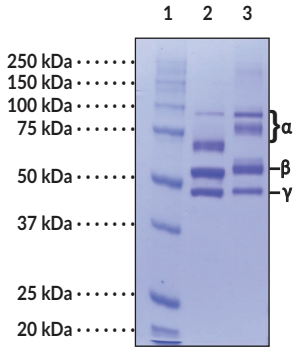
Stability: ≥6 months

Purity: Homogeneous by SDS-PAGE. Clottable proteins: ≥95%

Supplied in: Frozen solution in 50 mM Tris-HCl, pH 7.4, 150 mM sodium chloride

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: Human Fibrinogen (5 µg)
Lane 3: Human Fibrinogen (PAD2 Citrullinated) (5 µg)

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10	20	30	40	50
MKRMVSWSFH	KLKTMKHLLL	LLLCVFLVKS	QGVNDNEEGF	FSA**R**GH**R**PLD
60	**70**	**80**	**90**	**100**
KK**R**EEAPSL**R**	PAPPPISGGG	Y**R**A**R**PAKAAA	TQKKVE**R**KAP	DAGGCLHADP
110	**120**	**130**	**140**	**150**
DLGVLCPTGC	QLQEALLQQE	RPIRNSVDEL	NNNVEAVSQT	SSSSFQYMYL
160	**170**	**180**	**190**	**200**
LKDLWQKRQK	QVKDNENVVN	EYSSELEKHQ	LYIDETVNSN	IPTNL**R**VL**R**S
210	**220**	**230**	**240**	**250**
ILENLRSKIQ	KLESDVSAQM	EYC**R**TPCTVS	CNIPVVSGKE	CEEIIRKGGE
260	**270**	**280**	**290**	**300**
TSEMYLIQPD	SSVKPYRVYC	DMNTENGGWT	VIQN**R**QDGSV	DFG**R**KWDPYK
310	**320**	**330**	**340**	**350**
QGFGNVATNT	DGKNYCGLPG	EYWLGNDKIS	QLT**R**MGPTEL	LIEMEDWKGD
360	**370**	**380**	**390**	**400**
KVKAHYGGFT	VQNEANKYQI	SVNKYRGTAG	NALMDGASQL	MGENRTMTIH
410	**420**	**430**	**440**	**450**
NGMFFSTYDR	DNDGWLTSDP	RKQCSKEDGG	GWWYNRCHAA	NPNGRYYWGG
460	**470**	**480**	**490**	
QYTWDMAKHG	TDDGVVWMNW	KGSWYSM**R**KM	SMKIRPFFPQ	Q

Identification of modified sites in Human Fibrinogen (PAD2 Citrullinated) (Item No. 18473). The β-chain of Human Fibrinogen (PAD2 Citrullinated) was detected by LC-MS/MS and analyzed using Mascot and Scaffold PTM software. Deiminated arginines are indicated in teal.

Citrullination sites shown are representative of typical results. Batch-to-batch variations may occur.

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Description

Fibrinogen is a plasma clotting factor composed of three different polypeptide chains (α, β and γ). Under chronic inflammatory conditions, fibrinogen can be acted upon by the peptidylarginine deiminases enzymes (PAD2 and PAD4), converting specific arginine residues to citrulline. Patients with rheumatoid arthritis (RA) produce antibodies that bind citrullinated human fibrinogen.[1] The citrullinated fibrinogen and reactive antibodies form immune complexes in RA patients, and these immune complexes can stimulate macrophages.[2,3] Immunizing certain strains of mice with citrullinated human fibrinogen can induce the production of anti-citrullinated human fibrinogen antibodies and the development of arthritis that shares many pathophysiological features of the human disease.[4,5]

References

1. Hill, J.A., Al-Bishri, J., Gladman, D.D., *et al.* Serum autoantibodies that bind citrullinated fibrinogen are frequently found in patients with rheumatoid arthritis. *J. Rheumatol.* **33(11)**, 2115-2119 (2006).
2. Zhao, X., Okeke, N.L., Sharpe, O., *et al.* Circulating immune complexes contain citrullinated fibrinogen in rheumatoid arthritis. *Arthritis Res. Ther.* **10(4)**, (2008).
3. Sokolove, J., Zhao, X., Chandra, P.E., *et al.* Immune complexes containing citrullinated fibrinogen costimulate macrophages via toll-like receptor 4 and Fcγ receptor. *Arthritis Rheum.* **63(1)**, 53-62 (2011).
4. Hill, J.A., Bell, D.A., Brintnell, W., *et al.* Arthritis induced by posttranslationally modified (citrullinated) fibrinogen in DR4-IE transgenic mice. *J. Exp. Med.* 205(4), 967-979 (2008).
5. Yue, D., Brintnell, W., Mannik, L.A., *et al.* CTLA-4Ig blocks the development and progression of citrullinated fibrinogen-induced arthritis in DR4-transgenic mice. *Arthritis Rheum.* **62(10)**, 2941-2952 (2010).

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