

PRODUCT INFORMATION



Human Fibrinogen (PAD4 Citrullinated)

Item No. 400076

Overview and Properties

Synonyms: cFBG, cFG
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 PAD4.

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); avoid clotting by thawing the protein slowly on ice and flash freeze in liquid nitrogen if needed

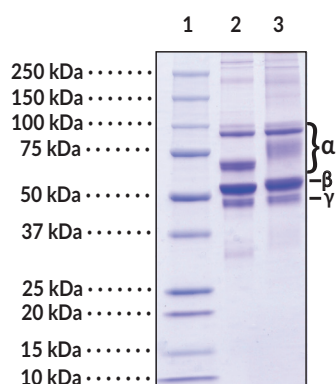
Stability: ≥ 6 months

Purity: Homogeneous by SDS-PAGE. Clottable proteins: $\geq 95\%$

Supplied in: Frozen solution with 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.

Images



Lane 1: MW Markers
Lane 2: Pre-Citrullination (5 μ g)
Lane 3: Post-Citrullination (5 μ g)

10	20	30	40	50
MKRMVSWSFH	KLKTMKHL	LLLCVFLVKS	QGVNDNEEGF	FSARGHRPLD
40	70	80	90	100
KKREEAPSLR	PAPPISGGG	YRARPAKAAA	TQKKVERKAP	DAGGCLHADP
110	120	130	140	150
DLGVLCTGC	QLQEALLQQE	RPIRNSVDEL	NNNVEAVSQT	SSSFQMYL
160	170	180	190	200
LKDLWQKRQK	QVKDENVVN	EYSSELEKHQ	LYIDETVNSN	IPTNLRVLS
210	220	230	240	250
ILENLSKIQ	KLESDVSAQM	EYCRTPCTVS	CNIPVVSQKE	CEEIIRKQGE
260	270	280	290	300
TSEMYLIQPD	SSVKPYRVYC	DMNTENGGWT	VIQNRQDGSV	DFGRKWDQPYK
310	320	330	340	350
QGFNGVATNT	DGKNYCLPG	EYWLGNKIS	QLTRMGPTL	LIEMEDWKGD
360	370	380	390	400
KVKAHYGGFT	VQNEANKYQI	SVNKYRGTAG	NALMDGASQL	MGENRTMTIH
410	420	430	440	450
NGMFFSTYDR	DNDGWLTSDP	RKQCSKEDGG	GWWYNRCHAA	NPNGRYWGG
460	470	480	490	—
QYTWDMAKHG	TDDGVVMMNW	KGSWYSMRKM	SMKIRPFPPQ	Q

Identification of modified sites in Human Fibrinogen (PAD4 Citrullinated) (Item No. 400076). The β -chain of Human Fibrinogen (PAD4 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.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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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 enzyme peptidylarginine deiminase 4 (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} Recently, it has been discovered that 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 Fc γ 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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