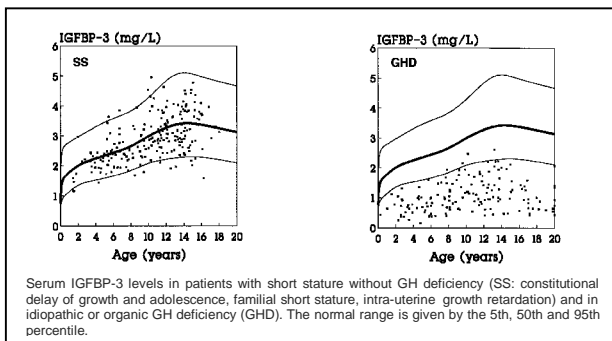


Insulin-like Growth Factor Binding Protein-3 ELISA IGF-E03A/E04A

Insulin-like growth factors (IGF)-I and -II are bound to specific binding proteins (IGFBPs) in the circulation. Today the existence of at least six binding proteins and several related proteins has been shown. The predominating IGFBP in blood is IGFBP-3 which largely determines the total IGF-I and IGF-II concentration.

Physiological function of IGFBPs is mainly to regulation of bioavailability of IGF-I and -II. **IGFBP-3 is the most abundant** IGFBP in human serum. It binds IGF-I with high affinity and is able to form a ternary complex with acid-labile subunit (ALS). IGF bound in this complex is biological inactive. Activation occurs by proteases cleaving ALS and IGFBP-3 specifically.



Clinical Relevance

For clinical practice, the most important regulatory factor of IGFBP-3 is GH. IGFBP-3 measurements correlate significantly with GH secretion. Slow response to GH and constant circadian levels during chronic daily application of GH suggest that IGFBP-3 reflects the GH secretory state over days.

Determination of human IGFBP-3 is done for **diagnostic of Growth Hormone deficiency**. Serum IGFBP-3 measurements are also suited for evaluating the potential of a patient to respond to GH and for **GH therapy monitoring**

Mediagnost IGFBP-3 Assays

Our enzym-immunoassays are suited for measuring IGFBP-3 in human **serum** and heparin/EDTA plasma for diagnostic and scientific purposes. Mediagnost IGFBP-3 assays use highly specific antibodies.

No cross reactivity to other components of the IGF system are known and small sample requirement is **ideal for use in pediatrics**

Reference Values

Age group	Percentiles					
	5	10	50	90	95	
0-1 week	0.42	0.48	0.77	1.23	1.41	
1-4 weeks	0.77	0.86	1.29	1.93	2.16	
1-3 months	0.87	0.98	1.48	2.23	2.52	
3-6 months	0.98	1.10	1.61	2.37	2.65	
6-12 months	1.07	1.19	1.72	2.49	2.76	
1-3 years	1.41	1.53	2.05	2.74	2.98	
3-5 years	1.52	1.66	2.25	3.05	3.33	
5-7 years	1.66	1.81	2.44	3.29	3.59	
7-9 y.	boys	1.73	1.88	2.50	3.33	3.61
	girls	1.88	2.04	2.72	3.62	3.94
9-11 y.	boys	1.99	2.15	2.81	3.67	3.97
	girls	2.20	2.38	3.13	4.11	4.45
11-13	boys	2.19	2.38	3.18	4.25	4.62
	girls	2.24	2.46	3.38	4.65	5.10
13-15 y.	boys	2.24	2.46	3.42	4.75	5.22
	girls	2.39	2.61	3.56	4.85	5.30
15-17 y.	boys	2.36	2.57	3.44	4.61	5.01
	girls	2.26	2.46	3.31	4.45	4.85
17-20 y.		2.24	2.45	3.33	4.53	4.95
20-30 y.		2.20	2.41	3.29	4.50	4.92
30-40 y.		2.08	2.29	3.18	4.42	4.86
40-50 y.		2.01	2.21	3.08	4.29	4.72
50-60 y.		1.96	2.16	3.02	4.22	4.65
60-70 y.		1.90	2.10	2.98	4.23	4.67
70-80 y.		1.81	2.00	2.87	4.09	4.52
> 80 y.		1.73	1.92	2.79	4.00	4.44

Serum levels are given as mg/L. Determined with IGFBP-3 RIA
The values above 70 years are extrapolated.

Mediagnost IGFBP-3 ELISA has a **European Approval for Clinical Diagnostics: EC Directive 98/79EG (O)**.

Assay Features ELISA E03A – total IGFBP-3

- ü Detection limit of 0.03 ng/ml
- ü Single standards: 0.4, 2, 6, 15, 30 ng/ml
- ü Assay-range 0.03 –15150 ng/ml
- ü Intra-Assay variance 1.9%
- ü Inter-Assay variance 5.7%
- ü Broad linear range (1:125 to 1:2000)
- ü 2 internal controls: RiliBÄK conform
- ü Fast – incubation time of 2.5 h

Mediagnost E04A detects functional IGFBP-3*

After binding of human IGFBP-3 to specific antibodies the bound IGFBP-3 is incubated with biotinylated IGF-I, which in turn is detected by colorimetric reaction catalyzed by streptavidin bound peroxidase.

This procedure guarantees that only functional (in the sense of IGF- I -binding) IGFBP-3 is measured.

patent pending DE19719001

Mediagnost total IGFBP-3 ELISA E03A

Pipette	Reagents	Well Positions
50 µl	Dilution Buffer VP	Pipette in all required number of wells
50 µl	Sample Buffer PP as Blank	A1 and A2
50 µl	Standard A (0.4 ng/ml)	B1 and B2
50 µl	Standard B (2 ng/ml)	C1 and C2
50 µl	Standard C (6 ng/ml)	D1 and D2
50 µl	Standard D (15 ng/ml)	E1 and E2
50 µl	Standard E (30 ng/ml)	F1 and F2
50 µl	diluted Control Sera KS1/KS2	G1 and G2 / H1 and H2
50 µl	diluted Sample	Pipette sample in the rest of the wells according to requirements
Cover the wells with the sealing tape		
Incubation: 1 h at RT , (shake at 350 rpm)		
5x 300 µl	Aspirate the contents of the wells and wash 5x with 300 µl each WP/well	each well
100 µl	Antibody-(POD)-Conjugate AK	each well
Cover the wells with the sealing tape		
Incubation: 1 h at RT (shake at 350 rpm)		
5x 300 µl	Aspirate the contents of the wells and wash 5x with 300 µl each WP/well	each well
100 µl	Substrate Solution S	each well
Incubation: 30 min in the dark at RT		
100 µl	Stop Solution SL	each well
Measure the absorbance within 30 min at 450 nm (≥590 nm Reference)		

Mediagnost functional IGFBP-3 ELISA E04A

Pipette	Reagents	Well Positions
50 µl	diluted Ligand Conjugate LK	Pipette in all required number of wells
50 µl	Sample Buffer PP as Blank	A1 and A2
50 µl	Standard A (0.4 ng/ml)	B1 and B2
50 µl	Standard B (2 ng/ml)	C1 and C2
50 µl	Standard C (6 ng/ml)	D1 and D2
50 µl	Standard D (15 ng/ml)	E1 and E2
50 µl	Standard E (30 ng/ml)	F1 and F2
50 µl	diluted Control Serum KS1	G1 and G2
50 µl	diluted Control Serum KS2	H1 and H2
50 µl	diluted Sample	Pipette samples in the rest of the wells according to requirements
Cover the wells with the sealing tape		
Incubation: 2 h at RT , 350 rpm		
5x 300 µl	Aspirate the contents of the wells and wash 5x with 300 µl each WP/well	each well
100 µl	diluted Enzyme Conjugate EK	each well
Cover the wells with the sealing tape		
Incubation: 1 h at RT , 350 rpm		
5x 300 µl	Aspirate the contents of the wells and wash 5x with 300 µl each WP/well	each well
100 µl	Substrate Solution S	each well
Incubation: 30 min in the dark at RT		
100 µl	Stop Solution SL	each well
Measure the absorbance within 30 min at 450 nm (≥590 nm Reference)		