GroPep

# TECHNICAL BULLETIN #3

## Biotinylated IGFs - Binding to IGFBPs & the Type 1 IGF Receptor

**Biotinylated reagents are rapidly replacing traditional radioactive techniques for the sensitive, rapid and safe detection of an increasing number of biological molecules. To support this trend GroPep offers three high purity Biotinylated human IGFs.**

**Using NHS-biotin reagents which react with primary amines in the IGF molecule, labelled molecules with excellent binding to avidin-linked detection reagents were produced.**

### *Biotinyl IGF-I*

- The major species is di-biotinyl IGF-I. Also contains mono- and tri-biotinyl species.
- Prepared with a linker arm chosen to minimize steric hindrance during subsequent avidin binding.

### *Mono-biotinyl IGF-II*

- Biotinyl group linked to the N-terminal alanine.

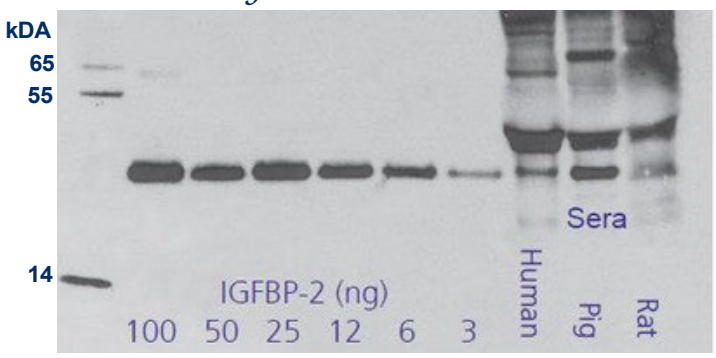
### *Di-biotinyl IGF-II*

- Biotinyl groups attached to both the N-terminal alanine and lysine 65.
- Similar binding characteristics as mono-biotinyl IGF-II. (Confirmed by Western Ligand Blot).

**Biotinyl IGFs are suitable for many applications. Two examples of their use are shown below. Other applications are envisaged, including as histochemical reagents.**

## 1. Visualization of IGFBPs by Western Ligand Blot

*With Biotinyl IGF-I:*




*With Mono-Biotinyl IGF-II:*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|---|---|
| **Gel:** | 10-20 % Tris-tricine SDS-PAGE, transferred to nitrocellulose |
| **Load:** | Serial dilution of bovine IGFBP-2. 2.5 µl each of human, pig and rat serum |
| **Probed with:** | 0.2 µg/ml biotinyl IGF-I or mono-biotinyl IGF-II |
| **Visualization:** | Streptavidin-horseradish peroxidase and chemiluminescent reagents |
| **Exposure time:** | 8 minutes |

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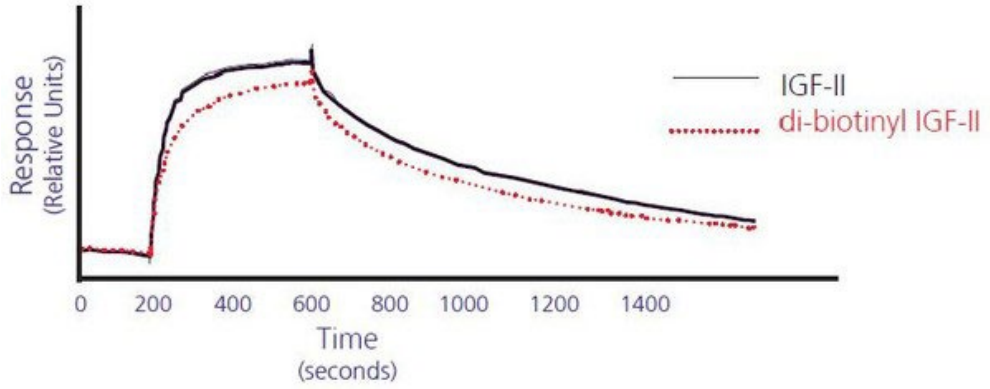
## 2. Type 1 IGF Receptor Binding

**Soluble Type 1 IGF Receptor (Surinya et al., 1998) was immobilized on a CM5 chip and a 200 nM solution of either human IGF-II or di-biotinyl IGF-II passed over the receptor. This BIAcore analysis shows that both the native molecule and the biotinyl IGF-II exhibit similar association and dissociation rates, demonstrating equivalent binding to the IGF receptor.**




## Useful References


**Surinya, K. H., et al. (1998) Production and characterisation of a soluble high affinity IGF-I receptor. Proc. Aust. Soc. Biochem. Mol. Biol., 30, Pos. 132.**

**Grulich-Henn, J., et al. (1998) Ligand blot analysis of insulin-like growth factor-binding proteins using biotinylated insulin-like growth factor-I. Hormone Res., 49, 1-7.**

**Op De Beeck, L., et al. (1997) Detection of serum insulin-like growth factor binding proteins on western ligand blots by biotinylated IGF and enhanced chemiluminescence. J. Endocrinol., 154, R1-R5.**

**Fowlkes, J. L. and Serra, D. (1996) A rapid, non-radioactive method for the detection of insulin-like growth factor binding proteins by Western ligand blotting. Endocrinol., 137, 5751-5754.**


### *Biotinyl Human IGF-I*

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|---|---|
| Code: AQU050 | 50 µg |
| Code: AQU100 | 100 µg |
| Code: AQU500 | 500 µg |

### *Mono-Biotinyl Human IGF-II*

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|---|---|
| Code: AMU010 | 10 µg |
| Code: AMU050 | 50 µg |

### *Di-biotinyl Human IGF-II*

| | |
|---|---|
| Code: ANU010 | 10 µg |

*For specifications, vial sizes and retail pricing on any of these reagents,* ***email*** *us at* ***info@gropep.com***


**For orders and enquiries contact GroPep Bioreagents via:**

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