

BD™ P800 Blood Collection System

for Preservation of Plasma GLP-1, GIP, Glucagon, and Ghrelin

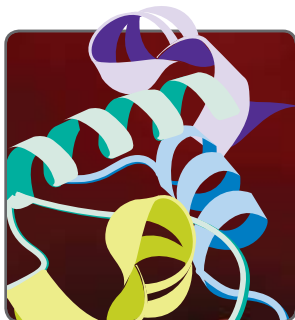


Enabling Metabolic
Biomarker Preservation



Helping all people
live healthy lives

P800 Preserves Metabolic Peptides



The search for proteomic biomarkers in human blood plasma holds incredible clinical potential. Rapid degradation of plasma proteins and peptides due to intrinsic proteolysis occurs within minutes of blood collection and handling. For example, the incretin hormones Glucagon-Like Peptide-1 (GLP-1), Gastric Inhibitory Polypeptide (GIP), and bioactive peptides Glucagon and Ghrelin have an extremely short half-life in blood making them very challenging for accurate analysis. Therefore, a significant preanalytical challenge is to preserve proteomic sample integrity.

The BD P800 is a sterile evacuated blood collection tube that offers a standardized method to collect and instantly preserve GLP-1, GIP, Glucagon and Ghrelin. The BD P800 tube has a proprietary cocktail which includes a DPP-IV, esterase and other protease inhibitors that are optimized for blood while yielding high-quality hemolysis-free plasma. The plasma obtained by processing the P800 tube can be used immediately, transported, or stored frozen.

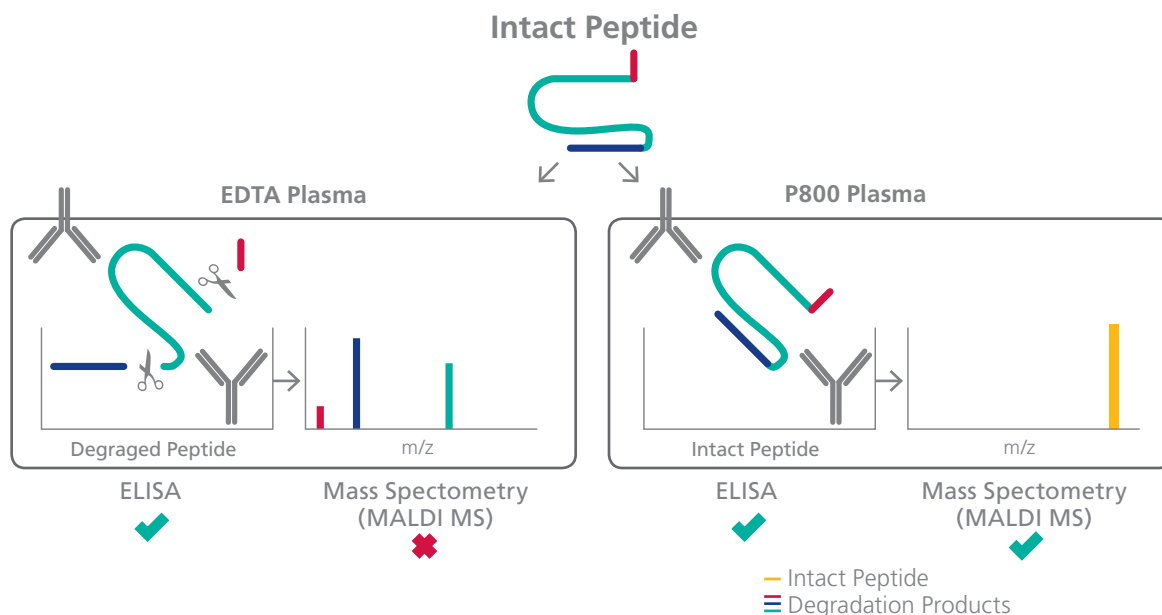


Stability ($T_{1/2}$) of Metabolic Peptides in P800 and EDTA Plasma Samples

Peptide	EDTA (h)	P800 (h)
GLP-1 (7-37)	4-8	> 96
GLP-1 (7-36A)	5-23	> 96
GIP (1-42)	~ 5	> 96
Ghrelin	~ 15 h	> 48-72
Glucagon	~ 5-15	> 48

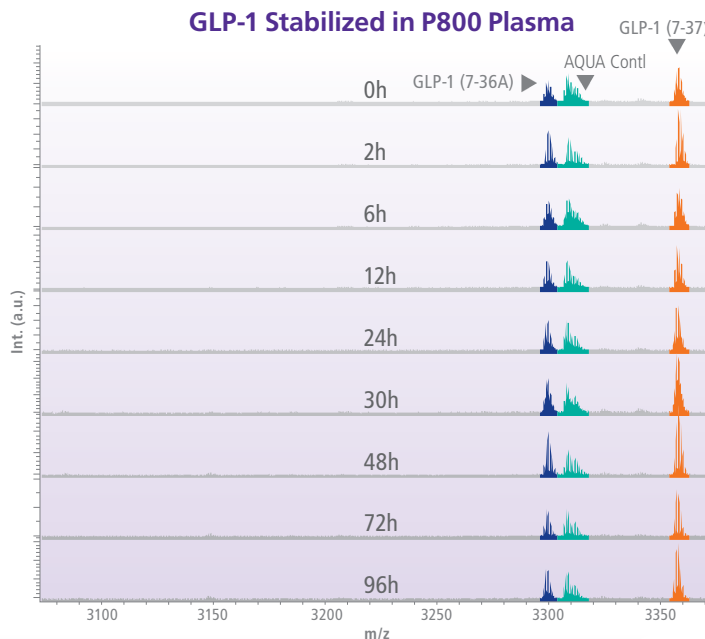
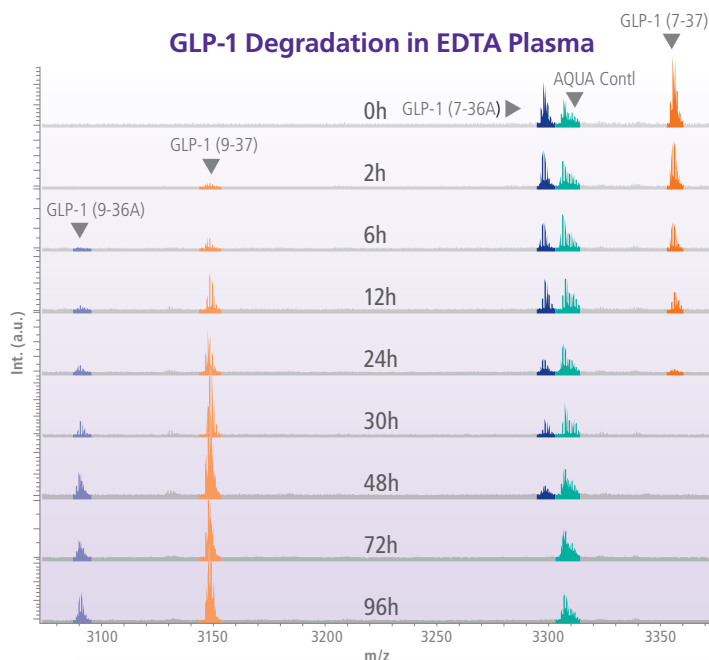


For clinical research trials, it is highly desirable to have a standardized method to evaluate the metabolic fate of bioactive peptides in biological fluids. Approaches for quantitation of bioactive peptides include immunoassays and mass spectrometric techniques. Disadvantages of some immunoassays include their inability to distinguish between intact and fragmented peptides which may be biologically relevant. Quantification of peptides by this technique, therefore, should be cautiously interpreted. High resolution mass spectrometry is the method of choice for sensitive and selective detection of peptides.





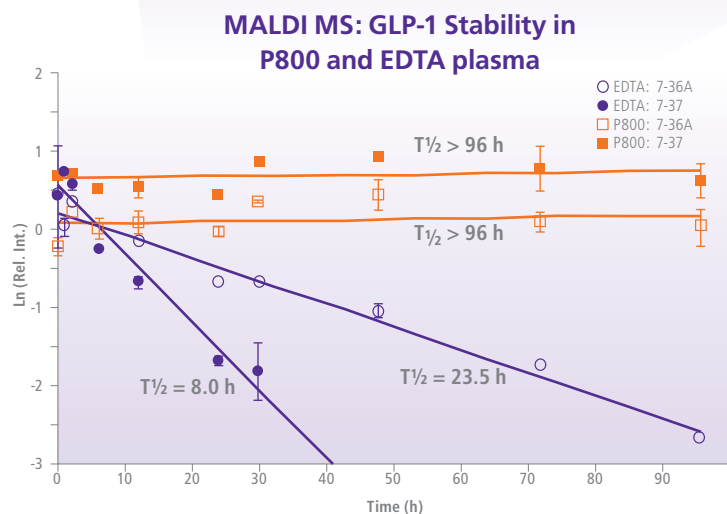
P800 Preserves GLP-1 Peptides



P800 and EDTA blood sample were spiked with GLP-1 (7-37) and GLP-1 (7-36A) and incubated at room temperature. At times indicated, peptides were analyzed by comparing to AQUA control using MALDI-TOF MS.

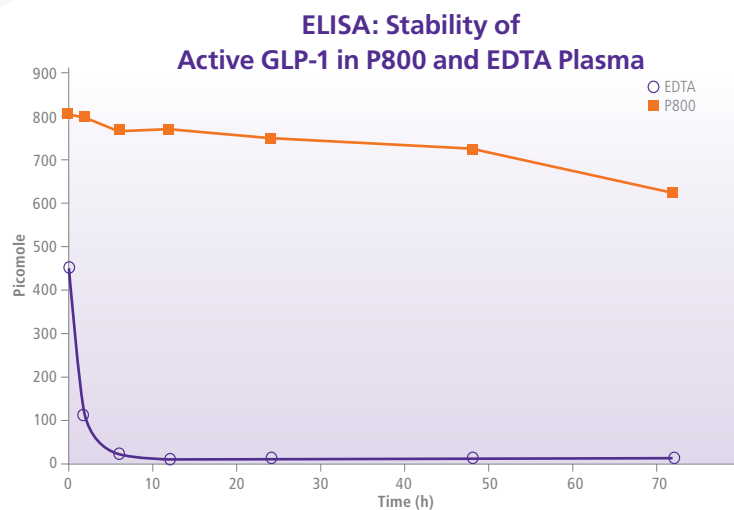
- Degradation of GLP-1 peptides was observed within 2-6 hours in EDTA Plasma with concomitant detection of the degradation products (GLP-1 (9-37) and (9-36A))
- GLP-1 (7-37) and GLP-1 (7-36A) was degraded to undetectable levels within 30 and 72 h respectively

- P800 stabilized both GLP-1 peptides for 96 h
- Degradation products (GLP-1 (9-37) and (9-36A)) were not significantly observed during this time



The relative intensity of GLP-1(7-37) and GLP-1 (7-36A) to AQUA control was compared using MALDI-TOF MS analysis.

- Both GLP-1 peptides are stabilized in P800 plasma for greater than 96 h
- The half-life of GLP-1(7-37) and GLP-1 (7-36A) in EDTA plasma is 8 and 23.5 h respectively

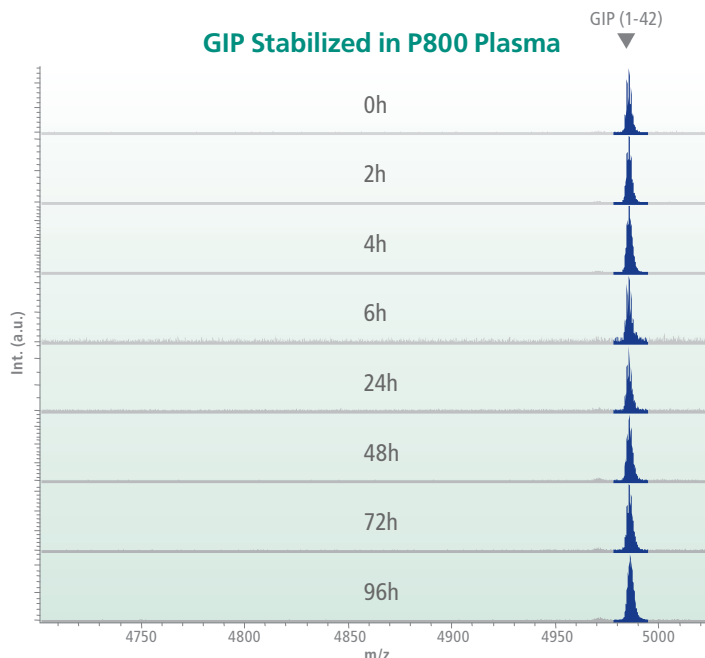
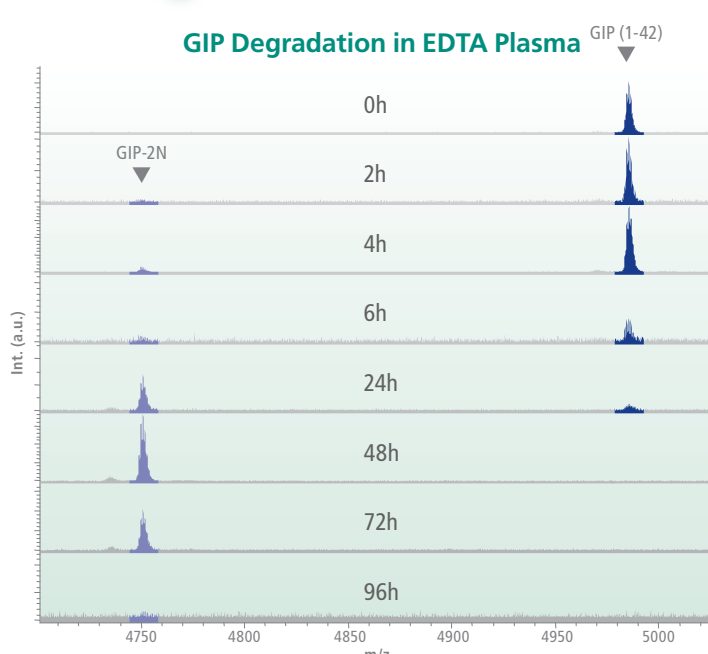


P800 and EDTA plasma samples were spiked with GLP-1 (7-36A) and incubated at room temperature. At times indicated, the peptide was analyzed by comparing the EDTA control to P800 with an ELISA assay.

- Degradation of the GLP-1 peptide was observed immediately in EDTA plasma with significant degradation occurring within 2 hours of spiking
- P800 stabilized GLP-1 for at least 48 hours



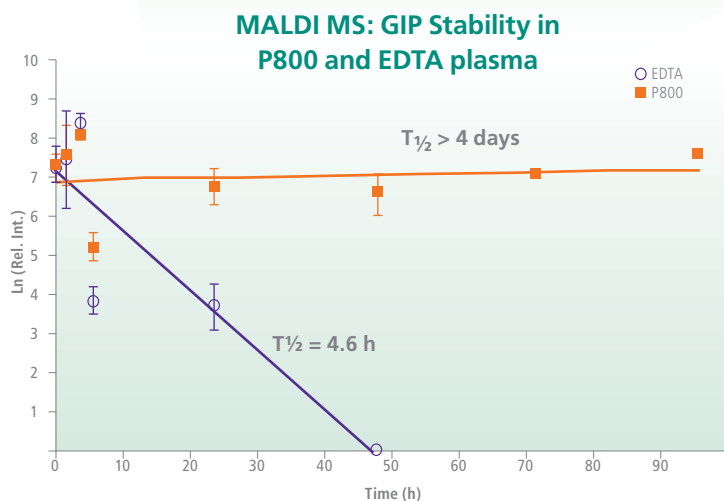
P800 Preserves GIP Peptide



GIP was spiked into P800 and EDTA plasma, and incubated at room temperature. At times indicated, the peptide was analyzed by MALDI-TOF MS.

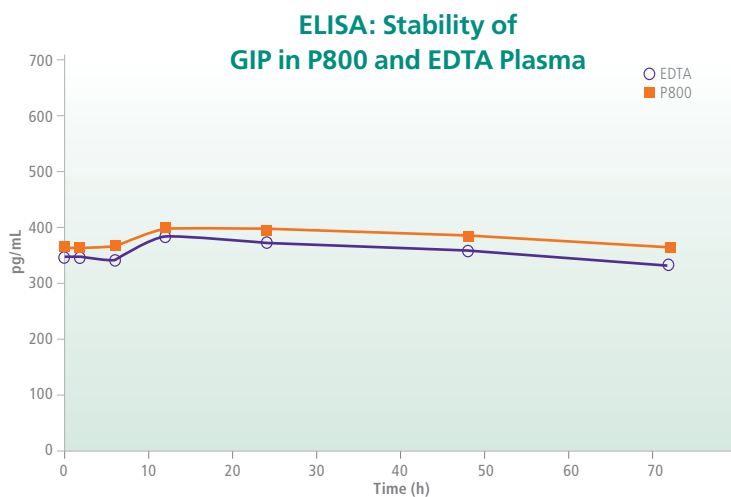
- Degradation of GIP (1-42) was observed within 2-6 hours in EDTA Plasma with concomitant appearance of its degradation product GIP (3-42)
- GIP (1-42) was degraded to undetectable levels after 48 h

- P800 stabilized GIP (1-42) for 96 h
- No degradation products (e.g. GIP(3-42)) were observed during 96 h



The stability of GIP (1-42) in P800 and EDTA plasma samples was compared using time-course MALDI-TOF MS.

- GIP (1-42) is stabilized in P800 plasma for greater than 96 h
- The half-life of GIP (1-42) in EDTA plasma is 4.6 h

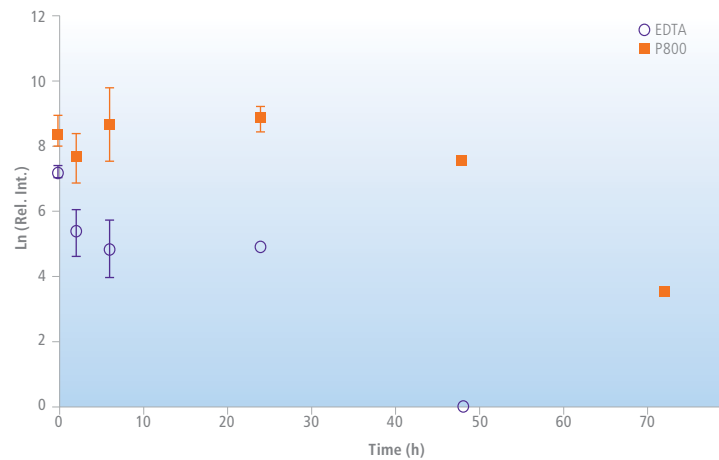


P800 and EDTA plasma samples were spiked with GIP and incubated at room temperature. At times indicated, the peptide was analyzed by comparing the EDTA control to P800 with an ELISA assay.

- GIP is stabilized in P800 and EDTA for at least 72 hours
- The ELISA results do not reflect the degradation of GIP (1-42) observed by MALDI MS



P800 Stabilizes Glucagon

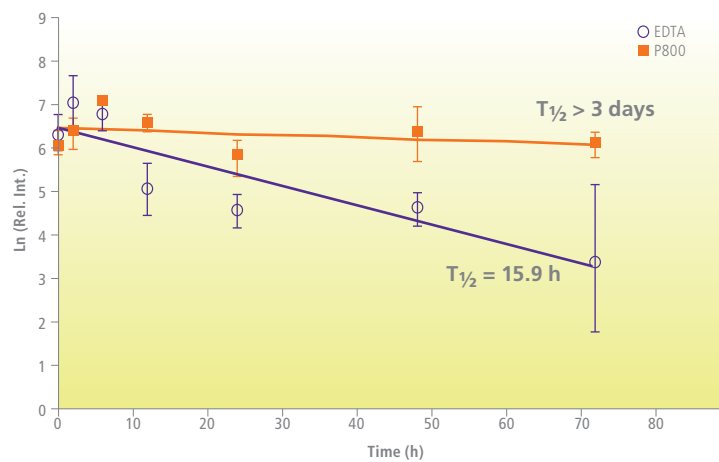


Glucagon was spiked into P800 and EDTA plasma samples, and incubated at room temperature. At specific times, the peptide was analyzed by MALDI-TOF MS. The half-life of Glucagon was determined.

- In P800, $T_{1/2}$ of glucagon is greater than 48 hours
- In EDTA, the estimated $T_{1/2}$ of glucagon is less than 6 hours




P800 Preserves Ghrelin



Ghrelin was spiked into P800 and EDTA plasma samples, and incubated at room temperature. At specific times, Ghrelin was analyzed using MALDI-TOF MS, and its half-life was determined.


- In P800, the half-life of ghrelin is greater than 3 days
- In EDTA, its half-life is 15.9 hours

Order Information



BD™ P800 Product Description

BD366421 8.5 mL 100 per case	BD366420 2.0 mL 100 per case
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Référence	Désignation	Conditionnement	Taille du tube	Volume de l'échantillon	Anticoagulant
BD366420	Tubes BD™ P800 Blood pour prélèvement sous vide et préservation <i>in vitro</i> des peptides plasmatiques : GLP-1, GIP, GLUCAGON et GHRELINE	100 Tubes	13 x 75 mm	2 ml	EDTA
BD366421	Tubes BD™ P800 Blood pour prélèvement sous vide et préservation <i>in vitro</i> des peptides plasmatiques : GLP-1, GIP, GLUCAGON et GHRELINE	100 Tubes	16 x 100 mm	8,5 ml	EDTA

A prélever impérativement avec une unité de prélèvement à ailettes, [voir protocole](#), disponible chez BD Diagnostics

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Prix en ligne



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