

BD™ Proteomik Analizleri ve Protein Koruyucu Kan Toplama Sistemleri

BD™ P100 Plazma Protein Koruyucu Kan Toplama Sistemi,

İnsan plazma proteinleri ve proteomik temelli biomarker çalışmalarınız için kan alma anından itibaren geniş bir spektrumda koruma.**BD™ P100 Plazma Protein Koruyucu Kan Toplama Sistemi**, proteaz inhibitörü ve mekanik seperatör içeriği ile optimal plazma protein stabilizasyonu sağlar. Böylelikle minimal hücresel kontaminasyon ve preanalitik varyasyona olanak sağlar.

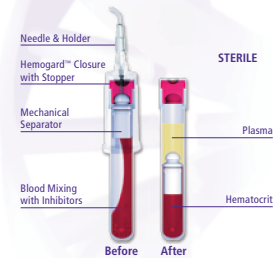
BD™ P700 Plazma GLP-1 Koruyucu Kan Toplama Sistemi

BD™ P700 Plazma GLP-1 Koruyucu Kan Toplama Sistemi, daha çok peptidoglukagon kaynaklı glukoz düzenleyici peptid olan glukagon benzeri peptid (GLP-1) kantitasyonu ve ölçüm çalışmaları için tercih edilen kan alma tüpüdür. **BD™ P700** proprieter Dipeptidil Peptidaz IV (DPP-IV) proteaz inhibitörü içerir ve bu sayede plazma içerisindeki GLP-1 degradasyonunu anında önler.

BD™ P800 Tüpleri,

BD™ P800 Tüpleri, diyabet ve obezite araştırmalarınızda Glukagon-benzeri peptid (GLP-1), Glukagon, ghrelin ve Glukoz-bağımlı İnsülinotropik Polipeptid (GIP) stabilizasyonu sağlayan bir proteaz inhibitör karışımı içerir. **BD™ P800** içeriğinde plazma içerisinde ki bioaktif peptidleri degradasyondan koruyan proprieter proteaz, esteraz ve DPP-IV inhibitörleri bulunur.

BD™ P100 Blood Collection System for Plasma Protein Preservation



Cross-section view of BD P100 Plasma Tube showing immediate, controlled mixing of blood with the proprietary additive.

Immediately Stabilizes Plasma Proteins

BD P100 is an evacuated blood collection tube that enables greater recovery and preservation of human plasma proteins for proteomics-based biomarker discovery studies. The BD P100 tubes contain a proprietary broad-spectrum protease inhibitor cocktail that provides immediate stabilization of plasma proteins at point of collection. The tube also features a patented, innovative, non-gel “mechanical” separator that results in minimal cellular contamination. The optimized protease inhibitor cocktail combined with features of the mechanical separator minimizes preanalytical variability, thus providing a system for the reproducible collection, separation and transportation of plasma for protein analysis studies.

During centrifugation, the mechanical separator is released from the stopper and migrates to a position between the plasma and cellular elements. After separation, plasma may be aspirated directly from the collection tube, eliminating the need to transfer the plasma to a secondary tube.

Unique Benefits:

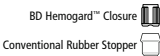
BD P100 tubes contain proprietary stabilizers that immediately solubilize during blood collection, enhancing recovery and preservation of plasma analytes:

- On-board stabilizers provide point-of-collection protection of plasma proteins
- Sterile and ready to use
- No reconstitution and secondary transfer steps required
- Innovative mechanical separator minimizes cellular contamination

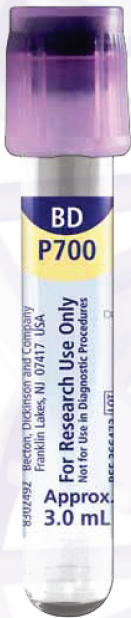
Reference Number	Glass (G) or Plastic (P)	Tube Size (mm)	Draw Volume (mL)	Closure Type/Color	Anticoagulant	Additive	Packaging (Tubes/Kit)
BD™ P100 Blood Collection System for Plasma Protein Preservation							
366448	P	16 x 100	~8.5	BD Hemogard™/ Clear	15.8 mg K ₂ EDTA	Proprietary Protein Stabilizers	24 tubes; 6 tubes/foil pouch 4 foil pouches/kit

www.bd.com/proteomics

See references on page 13.
BD P100 is for Research Use Only. Not for use in diagnostic procedures.



BD™ P700 Blood Collection System for Plasma GLP-1 Preservation



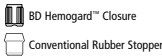
Enhances Preservation of GLP-1

BD P700 is especially suited as the blood collection tube of choice for assays that require quantitation and measurement of the preproglucagon-derived glucose regulatory peptide, glucagon-like peptide 1 (GLP-1). BD P700 contains a proprietary Dipeptidyl Peptidase IV (DPP-IV) protease inhibitor which provides immediate protection of GLP-1 from degradation in plasma.



Reference Number	Glass (G) or Plastic (P)	Tube Size (mm)	Draw Volume (mL)	Closure Type/Color	Anticoagulant	Additive	Packaging (Tubes/Kit)
BD™ P700 Blood Collection System for Plasma GLP-1 Preservation							
366473	P	13 x 75	~3.0	BD Hemogard™/ Lavender	5.4 mg K ₂ EDTA	Proprietary DPP-IV Inhibitor	20 tubes; 10 tubes/foil pouch 2 foil pouches/kit

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See references on page 13.
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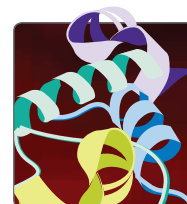
BD™ P800 Blood Collection System for Plasma GLP-1, GIP, Glucagon, and Ghrelin Preservation

BD P800 Preserves Metabolic Peptides



Enables Metabolic Biomarker Preservation

BD P800 is especially suited as the blood collection tube of choice for assays that require quantitation and measurement of the Glucagon-Like Peptide 1 (GLP-1), Glucose-Dependent Insulinotropic Polypeptide (GIP), Glucagon, and Ghrelin. BD P800 contains a proprietary cocktail of protease, esterase and DPP-IV inhibitors which provides immediate protection of bioactive peptides from degradation in plasma.



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 BD P800 tube can be used immediately, transported, or stored frozen.

Stability ($T_{1/2}$) of Metabolic Peptides in BD 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	> 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.

Reference Number	Glass (G) or Plastic (P)	Tube Size (mm)	Draw Volume (mL)	Closure Type/Color	Anticoagulant	Additive	Packaging (Box/Case)
BD™ P800 Blood Collection System for Plasma GLP-1, GIP, Glucagon, and Ghrelin Preservation							
366420	P	13 x 75	~2.0	BD Hemogard™/ Clear	3.6 mg K ₂ EDTA	Proprietary Cocktail of Protease, Esterase and DPP-IV Inhibitors	100/Case
366421	P	16 x 100	~8.5	BD Hemogard™/ Clear	15.3 mg K ₂ EDTA	Proprietary Cocktail of Protease, Esterase and DPP-IV Inhibitors	100/Case

www.bd.com/proteomics

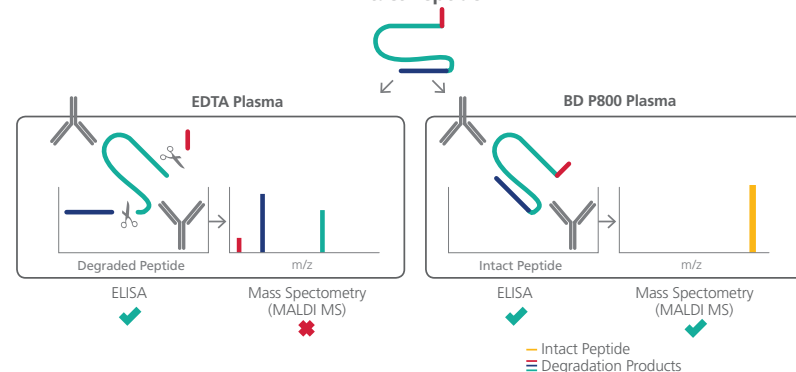
See references on page 13.

BD P800 is for Research Use Only. Not for use in diagnostic procedures.

BD Hemogard™ Closure

Conventional Rubber Stopper

Intact Peptide



Required BD Accessories *(sold separately)*

Please note that all BD Vacutainer® Blood Collection Sets and Accessory Products can be purchased separately from your authorized distributor. Please visit www.bd.com/vacutainer/products for additional information.

BD Vacutainer® Push Button Blood Collection Sets

The BD Vacutainer Push Button Blood Collection Set offers split-second protection for that single moment that could potentially change your life. The push-button safety mechanism instantly helps protect you against needlestick injury.

Reference Number	Needle Gauge	Needle Length (Inches)	Wing Color	Tubing Length (Inches)	Configuration With or Without Luer	Packaging Box/Case Quantities
BD Vacutainer® Push Button Blood Collection Sets						
✓ 367344	21	.75	Green	12	With	50/200
✓ 367352	21	.75	Green	12	Pre-Attached	20/100

BD Vacutainer® Safety-Lok™ Blood Collection Sets

The BD Vacutainer Safety-Lok Blood Collection Set is simple, easy to use, and is safety-engineered. The safety mechanism can be activated immediately after the blood draw and helps protect against needlestick injury. It is also offered with a pre-attached holder for added convenience and to help ensure OSHA single-use holder compliance.

Reference Number	Needle Gauge	Needle Length (Inches)	Wing Color	Tubing Length (Inches)	Configuration With or Without Luer	Packaging Box/Case Quantities
BD Vacutainer® Safety-Lok™ Blood Collection Sets						
367281	21	.75	Green	12	With	50/200
368652	21	.75	Green	12	Pre-Attached	25/200

BD Vacutainer® Holders

BD Vacutainer holders provide a quality, low-cost, single-use product that can help customers comply with OSHA regulations. The BD Vacutainer® One-Use Holder is compatible with BD Vacutainer® Eclipse™ Blood Collection Needles, BD Vacutainer® Safety-Lok™ Blood Collection Sets, BD Vacutainer® Push Button Blood Collection Sets, and the BD Vacutainer® Multi Sample Luer Adapter.

Reference Number	Description	Packaging Box/Case Quantities
BD Vacutainer® Holders		
✓ 364815	BD Vacutainer One-Use Holder	250/1000

www.bd.com/vacutainer

References

BD™ P100 Blood Collection System for Plasma Protein Preservation

Comparative Human Plasma Peptidome Analysis: BD P100 vs EDTA

Journal Articles

J. Yi, et al.
"Inhibition of Intrinsic Proteolytic Activities Moderates Preanalytical Variability and Instability of Human Plasma"
J Proteome Res., 2007;6:1768-1781.

Yi J, Liu Z, Craft D, O'Mullan P, Ju G, Gelfand CA.

"Intrinsic Peptidase Activity Causes a Sequential Multi-Step Reaction (MSR) in Digestion of Human Plasma Peptides"
J Proteome Res., 2008;7(12):5112-5118.

Craft D, Yi J, Gelfand CA.

"Time-Dependent and Sample-to-Sample Variations in Human Plasma Peptidome Are Both Minimized Through Use of Protease Inhibitors"
Analytical Letters. 2009;42(10):1398-1406.

O'Mullan P, Craft D, Yi J, Gelfand CA.

"Thrombin induces broad spectrum proteolysis in human serum samples"
Clin Chem Lab Med. 2009;47(6):685-693.

Scientific Posters

HUPO, Seattle, Washington, 2007
• Preanalytical Variability of Plasma Samples and Mitigating Strategies
• Monitoring Peptidome Variance within Different Blood Collection to Further Understand Human Plasma Proteome Stability

PepTalk, San Diego, California, 2007

• Stabilization of the Human Plasma Peptidome by Protease Inhibitors

HUPO, Long Beach, California, 2006

• Using LC-MALDI-MS to Study the Variability and Stability of Plasma Proteins

Protein Society, San Diego, California, 2006

• A Deeper Look Into Sample Collection and Handling-induced Variability of Plasma Proteins in Proteomics

HUPO, Boston, Massachusetts, 2006

• Characterization of Intrinsic Proteolytic Damage of Human Plasma Proteins During Sample Preparation

ASMS, Seattle, Washington, 2006

• Preanalytical Variability and the Stability of Human Plasma Proteins: Mass Spectrometry Changes After Blood Collection

US HUPO, Washington, DC, 2005

• Prevention of Proteolytic Digestion of Human Plasma Proteins by Protease Inhibitors

Comparative Human Plasma Peptidome Analysis: BD P100 vs Serum

Journal Articles

J. Yi, et al.
"Inhibition of Intrinsic Proteolytic Activities Moderates Preanalytical Variability and Instability of Human Plasma"
J Proteome Res. 2007;6:1768-1781.

Scientific Posters

HUPO, Seattle, Washington, 2007
• Preanalytical Variability of Plasma Samples and Mitigating Strategies

AACR, Washington, DC, 2007

• Inhibition of Intrinsic Proteolysis Stabilizes Plasma Samples

HUPO, Long Beach, California, 2006

• Inhibition of Intrinsic Proteolytic Activity Moderates Preanalytical Variability and Stabilizes the Human Plasma Proteome

AQUA Peptide Plasma and Serum Studies

Scientific Posters

HUPO, Seoul, South Korea, 2007
• Demonstrating Instability of Peptide Biomarkers in Human Blood Plasma Using Time-Course Mass Spectrometry

Mechanical Separator Studies

Scientific Posters

HUPO, Seattle, Washington, 2007
• Preanalytical Variability of Plasma Samples and Mitigating Strategies

AACC, Chicago, Illinois, 2006

• Effect of Plasma Separators on Peptide MALDI-TOF MS Spectra

Thrombin Studies: Nonspecific Proteolysis Induction in Serum Samples

Scientific Posters

AACC, Chicago, Illinois, 2006
• Thrombin Exhibits Nonspecific Proteolysis in Serum: Observations with Fibrinopeptide A

HUPO, Munich, Germany, 2005

• Intrinsic Preanalytical Variability of Serum Samples Is Evidenced in Peptide MALDI MS Spectra

BD™ P700 Blood Collection System for Plasma GLP-1 Preservation

AQUA Peptide Plasma and Serum Studies

Scientific Posters

HUPO, Seoul, South Korea, 2007
• Demonstrating Instability of Peptide Biomarkers in Human Blood Plasma Using Time-Course Mass Spectrometry

BD™ P800 Blood Collection System for Plasma GLP-1, GIP, Glucagon, and Ghrelin Preservation

Scientific Posters

The Association for Mass Spectrometry: Applications to the Clinical Laboratory, 2010
• Metabolic Peptide Biomarkers: From Sample to Spectrum

BD White Papers

• Ex vivo Stabilization of GLP-1 and GIP in Human Plasma
• Comparison of the BD P800 and BD P700 Blood Collection Systems and Other Protease Inhibitors for the Preservation of Active GLP-1
• Compatibility of BD P800 Tubes with Insulin Testing by Automated Immunoassay Analyzer and ELISA