



Bar-Coded Test Tubes for Use with RxDx Dosing:

ACT

Bar-coded flip-top test tubes for needleless blood transfer.
95 test tubes per package.

HRFTCA510 (black stopper)

Diatomaceous earth (Celite) activated, non-evacuated glass test tubes. Requires 2.0 cc of fresh whole blood. Recommended ACT for monitoring heparin during cardiac surgery, vascular surgery, PTCA, cardiac catheterization and post procedure monitoring. Kaolin activated, non-evacuated glass test tubes. Requires 2.0 cc of fresh whole blood. Recommended ACT for monitoring heparin in the presence of low to moderate dose aprotinin during bypass surgery.

HRFTK-ACT (gold stopper)

ACT Control Plasma

For quality control of HRFTCA510 and HRFTK-ACT test tubes.
10 Normal and 10 Abnormal plasma vials, 20 vials distilled water, 20 vials calcium chloride.
30 Normal and 30 Abnormal plasma vials, 60 vials distilled water, 60 vials calcium chloride.

CPL2

CPL2-30

HRT

Heparin Response Test for bypass surgery and aggressive cardiac invasive procedures. 40 tubes per box.
Porcine heparin, Celite based.
Same as above, but kaolin based.

(mint green tops)

P-HRT480P

R-HRT480PK

HRT Whole Blood Control

For quality control of HRT test tubes.
10 Level 1 whole blood vials with 10 diluent vials,
10 Level 2 whole blood vials with 10 diluent vials.

RQCHRT

PRT

Protamine Response Test for determination of initial protamine dose at the end of CPB. 40 tubes per box.
Celite based for use when low to moderate levels of heparin are present. Same as above, but kaolin based.
Celite based for use when moderate to high levels of heparin are present. Same as above, but kaolin based.

R-PRT200 (peach top)

R-PRT200K (peach top)

R-PRT400 (red top)

R-PRT400K (red top)

PDA

Protamine titration assay for verifying heparin neutralization and quantifying additional protamine sulfate dosages (if any). 40 tubes per box.
Celite based.
Kaolin based.

(Orange tops)

PDAO

PDAO

PRT/ PDA Whole Blood Control

For quality control of PRT and PDA test tubes
10 Level 1 whole blood vials with 10 diluent vials,
10 Level 2 whole blood vials with 10 diluent vials.

RQCPRT

HiTT

High Dose Thrombin Time test tube.
Requires 1.5 cc of fresh whole blood. Recommended as a specific assay for monitoring heparin and determining circulating heparin levels via factor IIa inhibition in the presence or absence of aprotinin during CPB. 20 tubes and 20 vials distilled water per package

(turquoise-top)

A501

HiTT Whole Blood Control

For quality control of HiTT test tubes
10 Level 1 whole blood vials with 10 diluent vials,
10 Level 2 whole blood vials with 10 diluent vials.

RQCHiTT



HEMOCHRON® Response Whole Blood Coagulation System

RxDx® Analysis Module for
Heparin and Protamine Dosing

HRFTCA510



R-PRT200K



R-HRT480PK



PDAO



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8 Olsen Avenue • Edison, NJ 08820 USA
tel: 732.548.5700 • fax: 732.248.1928
www.itcmed.com

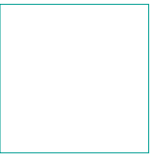
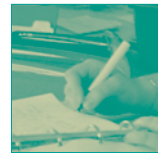
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THE POINT OF CARE

MRES:82 8/05





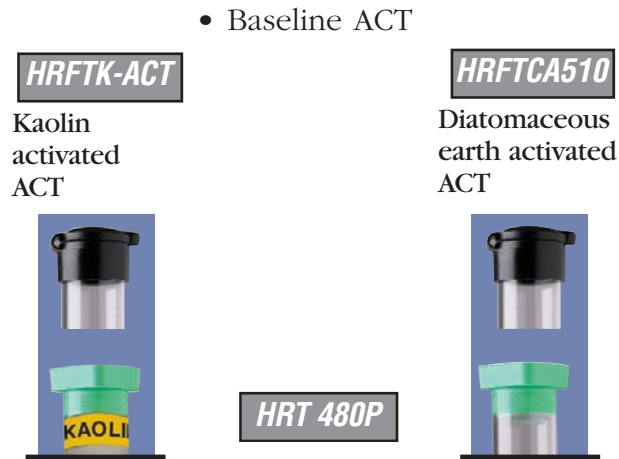
RxDx Dosing Uses Patients' Own Blood

Hemostasis Management in Cardiac Bypass (CPB) Surgery

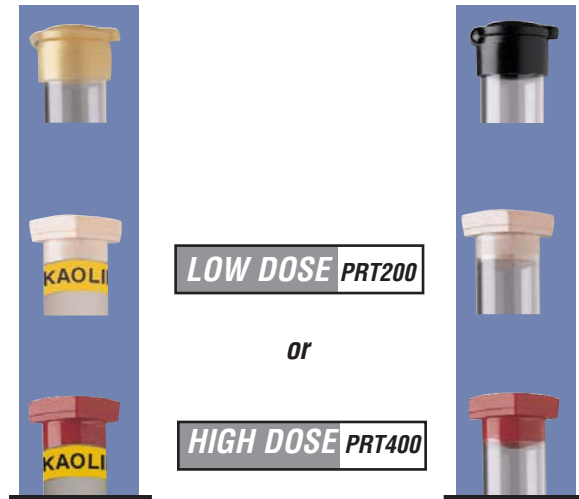


A501 HiTT

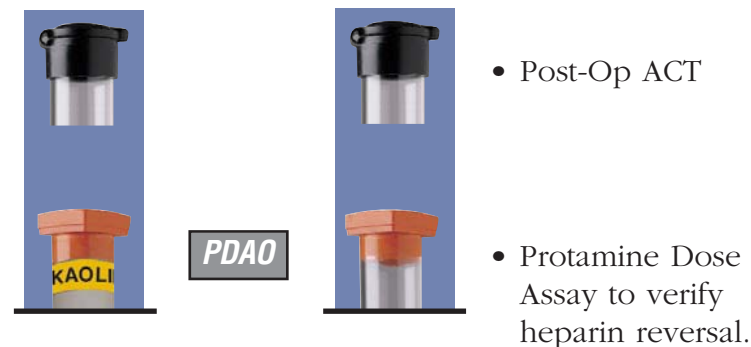
- High Dose Thrombin Time (HiTT) determines circulating heparin levels and is unaffected in the presence of aprotinin.



- Heparin Response Test reflects heparin sensitivity or resistance, and predicts adequate dosage of heparin.



- Status ACT
- Protamine Response Test predicts adequate dose of protamine.



- Post-Op ACT
- Protamine Dose Assay to verify heparin reversal.

- Summary:**
- Better patient outcomes
 - Reduces cost

HRT (HEPARIN RESPONSE TEST)

- Patients can vary twelve-fold in their sensitivity to, and metabolism of heparin.
- Empirical dosing does not reflect heparin-sensitive or heparin-resistant patient requirements.
- Use HRT to determine the patient-specific dose of heparin needed.
- Use Kaolin HRT for cases when aprotinin is used.

PRT (PROTAMINE RESPONSE TEST)

- At end of CPB it is desirable to neutralize circulating heparin to minimize the potential for post-surgical bleeding.
- It is advantageous to administer the minimal effective dose of protamine because of potential complications associated with its use.
- The PRT can predict the individual dosage required to neutralize circulating heparin.
- Use kaolin PRT for cases when aprotinin is used.

INTRA-OPERATIVE EVALUATION

- To insure adequate anticoagulation is maintained throughout the case.
- Maintain your target time with the standard Celite® ACT or Kaolin ACT.
- Kaolin ACT is recommended with low to moderate aprotinin use.
- HiTT (High Dose Thrombin Time) test reports both the heparin effect and the functional circulating heparin level. Can be used with or without aprotinin.

POST-OPERATIVE EVALUATION

- Can help those patients at increased risk of bleeding after surgery.
- Provide a valuable tool in transfusion management by ensuring that appropriate blood products are selected.
- Identify residual heparin with PDAO (Protamine Dose Assay) or PDAOK or TT (Thrombin Time)/ HNTT (Heparin-Neutralized Thrombin Time).
- PDAO quantifies additional protamine requirements (if any).
- Use PDAOK for cases when aprotinin is used.
- TT/HNTT identifies both residual heparin and dysfibrin(ogen)emias.

SUGGESTED READING

Jobes, D.R. M.D., et al. Increased accuracy and precision of heparin and protamine dosing reduces blood loss and transfusion in patients undergoing primary cardiac operations. *J Thorac Cardiovasc Surg* Vol.110, 36-45, 1995

Jobes, D.R. M.D., et al. Cost effective management of heparin/ protamine in CP bypass: Analysis by type of surgery. Presented at the American Society of Anesthesiology. October 21-22, 1996

Zucker, M.L. PhD., et al. Utility of In Vitro heparin and protamine titration for dosing during cardiopulmonary bypass surgery. *The Journal of Extra-Corporeal Technology* Vol.29, No.4, 176-180, December 1997

Zucker, M.L. PhD., et al. Comparison of celite and kaolin based heparin and protamine dosing assays during cardiac surgery: The in vitro effect of aprotinin. *The Journal of Extra-Corporeal Technology* Vol.27, No.4, 201-207, December 1995

DeLaria, G.A., M.D., et al. Heparin-Protamine Mismatch. *Arch Surg*. Vol.129, 945-951, September 1994

Jaryno, S.A., BS, et.al. The Hemochron Response automated RxDx dosing system. AMSECT, 2003

Bennett, K.M., BSA, et al. A four-year experience with patient individualized heparin and protamine dosing using the Hemochron RxDx system. *The Journal of Extra-Corporeal Technology* Vol.33, 19-22, 2001

