

Chromogenic Factor X: Features & Benefits

DiaPharma Factor X Kit
(KDPGFX)

Why Test for Factor X?

Monitoring Warfarin is a Delicate Balance.

The DiaPharma Factor X Kit Can Help.

Why Test for Factor X?

- ▶ **Question:** What do you do if a warfarin patient has a falsely prolonged PT and an unreliable INR, whether it's from the presence of a direct thrombin inhibitor or lupus inhibitor?
- ▶ **Are your patients getting the proper level of anticoagulation?**
 - Can you trust the INR result?

Why Test for Factor X?

- ▶ The chromogenic Factor X assay is an accurate predictor of therapeutic warfarin levels when INR values are unreliable
 - In the presence of interferences like lupus anticoagulants
 - When direct thrombin inhibitors like Argatroban are discontinued (bridging from DTI to warfarin)

Why Test for Factor X?

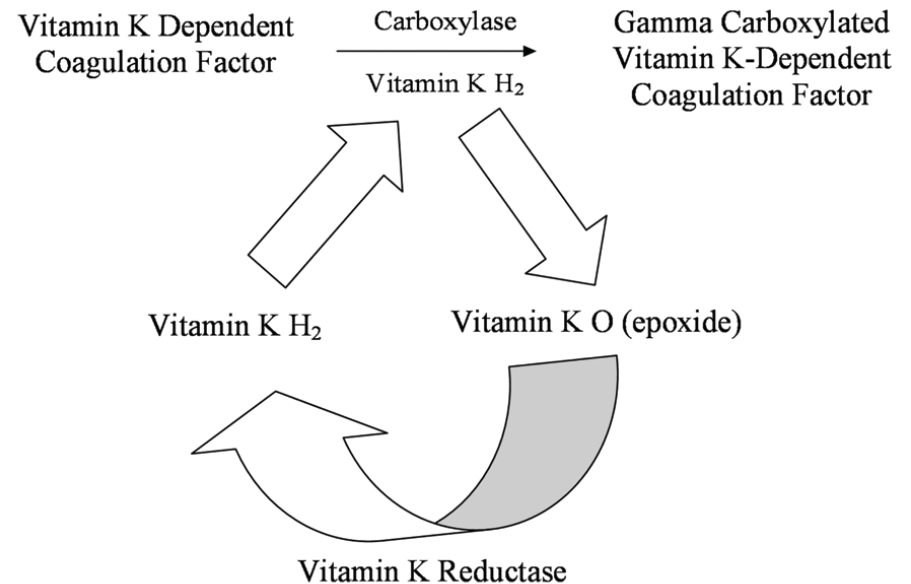
- ▶ Standard methods of monitoring may be substandard in that they often result in overestimation of anticoagulation.

Why Test for Factor X?

- Patients with lupus anticoagulants who OAC therapy often demonstrate a prolonged baseline prothrombin, and significantly varying INRs.
- Anti-phospholipid antibodies interfere with the phospholipid-dependent clotting reactions that are part of most PT assays.
- DTIs like hirudin and argatroban also interfere with the PT assay

Why Test for Factor X?

- ▶ In contrast, the Factor X reaction does not require a phospholipid membrane surface



γ-Carboxylation of Vitamin K-Dependent Factors

Why Test for Factor X?

- ▶ Studies have shown that using a chromogenic assay to measure Factor X levels in patients with PL-dependent interferences is a reliable way to determine the intensity of coagulation

Why Test for Factor X?

- ▶ Warfarin decreases factor X (as well as factors II, VII, and IX), and a chromogenic assay is available for factor X which has no interference from lupus anticoagulants, hirudin or argatroban.

Why Test for Factor X?

- When the INR is 2–3, the chromogenic factor X level is approximately 20% to 40%.
- Each laboratory should determine its own chromogenic factor X therapeutic range

Benefits of Chromogenic FX Assay

- ▶ Solution to dealing with unstable INRs in warfarin patients with lupus inhibitors
 - prolonged INRs such as patients with lupus inhibitors, patients being bridged from thrombin inhibitors like hirudin or argatroban
- ▶ Eliminates the issues of varying sensitivities of different thromboplastins
- ▶ Reliable, commercially available, and easy to use assay kit
- ▶ Applications for automated coagulation analyzers

Selected References

- ▶ Moll S. and Ortel T. Monitoring Warfarin Therapy in patients with Lupus Anticoagulants; *Annals of Internal Medicine*, August 1, 1997, 127(3).
- ▶ Thom J, Ivey L, Gilmore G, Eikelboom JW. Evaluation of the phospholipid rich dilute Russell's Viper Venom assay to monitor oral anticoagulation in patients with lupus anticoagulant. *Blood Coagulation and Fibrinolysis* 2004, 15: 353 – 357.
- ▶ Sanfelippo MJ, Sennet J, McMahon EJ. Falsely Elevated INRs in Warfarin-Treated Patients with the Lupus Anticoagulant. *Wisconsin Medical Journal*, June 2000: 62 – 64, 43.
- ▶ Arpino PA, Demirjian Z, Van Cott, EM. Use of the Chromogenic Factor X Assay to Predict the International Normalized Ratio in Patients Transitioning from Argatroban to Warfarin. *Pharmacotherapy* 2005, 25 (2): 157–164.