

Effective March 31, 2021, TriCore's Special Coagulation Laboratory is pleased to introduce two new assays to measure levels of direct oral anticoagulants (DOACs), apixaban (Eliquis®) and rivaroxaban (Xarelto®).

Direct Oral Anticoagulants (DOACs) are direct Factor Xa inhibitors. They were formulated to prevent clot formation without the traditional need for monitoring that comes with heparin or warfarin. However, there are situations in which it is necessary and/or helpful to determine levels of these drugs, especially in emergency situations or in the elective perioperative setting. The TriCore quantitative apixaban and rivaroxaban assays use the HemosIL Anti Xa reagent to determine medication levels by calibrating to the indicated medication. Using the specific assay, physicians can determine the levels of DOAC in a patient sample and proceed accordingly.

Interferences for these assays are similar to those for the heparin anti-Xa assay. In addition, while the reported result is calibrated to the specific DOAC (apixaban or rivaroxaban), these assays are NOT specific and will detect ANY anticoagulant with anti-Xa activity, including unfractionated heparin, low molecular weight heparins (i.e. enoxaparin), other direct oral anticoagulants (i.e. apixaban or rivaroxaban), and fondaparinux. Due to this known interference, "ask at order entry" questions pertaining to the patient's anticoagulation therapy will appear with this order to evaluate the appropriateness of the specific anticoagulant level ordered. If this is deemed to be an inappropriate order (i.e. apixaban level order for a patient on heparin), the order will be cancelled and credited with notification to the ordering provider. Should alternative testing be desired on the cancelled/credited sample, please contact TriCore's Client Engagement Center (505.938.8922 or 1.800.245.3296).

Similar to the reported heparin results, there is NO reference range provided for the reported apixaban or rivaroxaban levels. However, a comment is included with the reported trough and peak ranges for the anticoagulant, as indicated below. Clinical correlation is required to understand the significance of the value.

For Apixaban | Test Code APXQNT

Reported Trough Range: 41-230 ng/mL

Reported Peak Range: 91-321 ng/mL

For Rivaroxaban | Test Code RIVQNT

Reported Trough Range: 6-87 ng/mL

Reported Peak Range: 189-419 ng/mL

References

1. Gosselin R.C., Adcock D.M., et al. International Council for Standardization in Haematology (ICSH) Recommendations for Laboratory Measurement of Direct Oral Anticoagulants. *Thromb Haemost.* 2018; 118:437-450.
2. Douxfils, J, Ageno, W, et al. Laboratory testing in patients treated with direct oral anticoagulants: a practical guide for clinicians. *J Thromb Haemost* 2018; 16: 209-19.
3. Samuelson, B.T., Cuker, A. Measurement and reversal of the direct oral anticoagulants. *Blood Reviews.* 2017; 31: 77-84.
4. Cuker A, Siegal D. Monitoring and reversal of direct oral anticoagulants. *Hematology Am Soc Hematol Educ Program.* 2015;2015:117-24.

