Product Code: X9905
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FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

INTENDED USE

DOAC-Stop-L™ is a liquid version of DOAC-Stop™ that can be used to efficiently extract all types of Direct Oral Anti-Coagulants (DOACs), dabigatran, rivaroxaban and similar compounds such as argatroban from test plasmas with minimal effect on plasma proteins involved in the clotting mechanism (1).

INTRODUCTION

DOACs are known to interfere with almost all clotting tests to varying degrees. DOAC-Stop-L™ activated charcoal has extraordinary affinity for DOACs. After treatment with DOAC-Stop-L™, samples may be analysable for underlying coagulation defects such as factor deficiencies, heparin, lupus anticoagulant or other interfering antibodies. (Please see references).

CONTENTS OF PRODUCT

Product Code	Pack Size
X9905-100	2 ml

PRECAUTIONS

DOAC-Stop-L™ is intended for use with plasma samples suspected to contain DOACs. If test results are unchanged by DOAC-Stop-L™ and DOACs are still suspected to be present, apply appropriate chromogenic anti factor Xa or anti thrombin assays to obtain specific DOAC results. Contact your distributor or manufacturer for technical support.

Store at room temperature. Keep dry. Do not use after the expiry date indicated on the label. Treat all clinical material as potentially infectious and dispose of in accordance with local operating regulations. For further information, please refer to Safety Data Sheet and Product Information.

INSTRUCTIONS FOR USE

Sample preparation: DOAC-Stop-L™ has been developed for use with citrated plasmas. Follow your usual validated laboratory procedures for preparing test plasma. Apply the citrated plasma in the procedure below to remove any DOAC if present.

Method for DOAC removal from a test plasma:

1.	Add 1.0mL of citrated test plasma to be treated to a plastic centrifuge tube at 20-25°C. *Ideally 1.0mL plasma but a range from 0.5ml to 1.5ml is acceptable.*
2.	Shake DOAC-Stop-L vigorously before use. Add 20 µl of DOAC-Stop-L™ into the plasma. Mix for a further 5 minutes.
3.	Centrifuge down the particulate matter (for example, 5 minutes at 2000g or 1 minute at 7000g in a microfuge). Do not stop centrifuging too quickly.
4.	The supernatant plasma, now depleted of DOACs can be used directly for testing or can be transferred into a separate plastic tube for frozen storage.

APPLICATION

Plasmas treated with DOAC-Stop-L™ may be used for reliable routine assessment of known blood coagulation parameters. The degree of shortening induced by DOAC-Stop-L™ in a clotting time test depends on the concentration and type of DOAC as well as the on the underlying plasma itself. Clotting time results with DOAC sensitive tests such as dRVVT and APTT tests, may be expressed as ratios of test result before (B) to that obtained after (A) DOAC-Stop-L™ treatment. The B/A result ranges upward from 1.0 and correlates positively with DOAC concentration depending on which DOAC and test is used. DOAC-Stop-L™ does not affect heparins. May be suitable in use with whole blood (Unpublished results).

LIMITATIONS

DOAC-Stop-L™ may extract low molecular weight compounds resembling DOACs from plasmas. Those affecting coagulation (but administered intravenously, not orally) include argatroban, aprotinin, protamine, hirudin analogues, polymyxin and related cationic compounds**.**

PERFORMANCE CHARACTERISTICS

Twenty microliters of DOAC-Stop™ in 1.0mL of normal plasma spiked with 500ng/ml of dabigatran, apixaban, rivaroxaban or edoxaban will remove more than 95% of the DOAC. There was no effect on the baseline APTTs after 3 hours further incubation. In 92 test plasma samples covering a range of abnormalities, 89 gave definitive results and 3 were equivocal after DOAC-Stop™ in view of test sample complexity [1].

A recent study on 135 DOAC-treated plasmas showed that DOAC-Stop™ was mostly effective in overcoming the effects of dabigatran in 40 cases, apixaban in 38 cases, rivaroxaban 42 cases and edoxaban 15 cases on several thrombophilia screening tests. The incidence of false positive lupus anticoagulants fell from approximately 30% to zero [2].

INDEMNITY NOTICE

DOAC-Stop-L™ is intended to be used with plasma samples containing DOACs. Follow procedures and refer to precautions that may affect the stated or implied claims and performance of this product. Haematex Research Pty Ltd and its agents or distributors are not liable for damages.

REFERENCES

[1] Exner T, et al, “Effect of an activated charcoal product (DOAC-Stop™) intended for extracting DOACs on various other APTT-prolonging agents. Clin Chem Lab Med. 2019;57: 690-696.

[2] Exner T, et al. “Simple method for removing DOACs from plasma samples” Thromb. Res. 2018; 16:1028-39.

[3] Favresse J, et al. “Evaluation of the DOAC-Stop™ procedure to overcome the effect of DOACs on several thrombophilia screening tests”. TH Open, 2018; 2: e202-e209.

[4] Jacquemin M, et al. “The adsorption of dabigatran is as efficient as addition of idarucizumab to neutralize the drug in routine coagulation assays”. Int. J. Lab.Hematol. 2018;40: 442-447.

[5] Kopatz WF, et al. “Use of DOAC-Stop™ for elimination of anticoagulants in thrombin generation assays”. Thromb. Res. 2018; 170: 97-101.

[6] Platton S, Hunt C. “Influence of DOAC-Stop™ on coagulation assays in samples from patients on rivaroxaban or apixaban”. Int J Lab Haematol. 2018; 41:1-7.

[7] Exner T, et al. “Clotting test results correlate better with DOAC concentrations when expressed as a “Correction Ratio”; results before/after extraction with the DOAC-Stop™ reagent”. Thromb Res 2019; 179: 69-72.

[8] Michał Ząbczyk, et al, “The effect of DOAC-Stop on lupus anticoagulant testing in plasma samples of venous thromboembolism patients receiving direct oral anticoagulants” https://doi.org/10.1515/cclm-2018-1197

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