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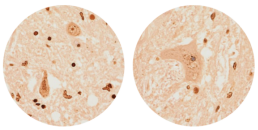
TDP-43 RNA aptamer staining to detect pathological TDP-43 in FFPE human tissue, as described in Spence and Waldron et al., 2024 (Acta Neuropathologica): A SOP and tick-sheet. v2. V.2



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Fergal M Waldron[1], Holly Spence[1], Jenna Gregory[1]

[1]University of Aberdeen

Gregory Lab

Jenna Gregory
University of Aberdeen

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protocols.io https://dx.doi.org/10.17504/protocols.io.eq2lyjo4mlx9/v2 Version created by **Jenna Gregory**

Manuscript citation:
References for citation of this method

Please cite both of these below if using this method:

The citation, Spence and Waldron et al., 2024, for the first publication for the development, modification and employment of theTDP-43 RNA aptamer to stain human tissue published in Acta Neuropathologica.

RNA aptamer reveals nuclear TDP-43 pathology is an early aggregation event that coincides with STMN-2 cryptic splicing and precedes clinical manifestation in ALS.
Holly Spence*, Fergal M. Waldron*, Rebecca S. Saleeb, Anna-Leigh Brown, Olivia M. Rifai, Martina Gilodi, Fiona Read, Kristine, Roberts, Gillian Milne, Debbie Wilkinson, Judi O'Shaughnessy, Annalisa Pastore, Pietro Fratta, Neil Shneider, Gian Gaetano Tartaglia, Elsa Zacco, Mathew H. Horrocks, Jenna M. Gregory‡. *Acta Neuropathologica* 2024 Mar 5;147(1):50. DOI: 10.1007/s00401-024-02705-1. *equal contributions, ‡corresponding author.

The citation, Waldron and Spence et al., 2024, for this SOP published on protocols.io is:

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Protocol status: Working
We use this protocol and it's working

Created: March 01, 2024

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Protocol Integer ID: 102860

Keywords: ALS, MND, FTD, ALSFTSD, TDP-43, RNA aptamer, Human tissue staining, Immunohistochemistry

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Target ALS
Grant ID: BB-2022-C4-L2

Disclaimer

Authors declare no conflicts of interest.

Abstract

Here we provide a SOP to outline the correct procedures for performing Immunohistochemistry (IHC) to detect pathological TDP-43 in FFPE-preserved human tissue using the TDP-43 RNA Aptamer, as described in Spence and Waldron *et al.*, 2024 published in *Acta Neuropathologica* (DOI: 10.1007/s00401-024-02705-1).

Users with access to Sequenza immunostaining racks and histological facilities (with fume hood) should be able to carry out all steps over two days.

This protocol uses the TDP-43^{APT} sequence published in Zacco *et al.*, 2022. The sequence is: CGGUGUUGCU with a 3' Biotin-TEG modification, purified using HPLC, scale: 1.0 μM synthesis.

References for citation of this method

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Attachments

PDF
TDP-43 RNA Aptamer_I...
298KB

PDF
TDP-43 RNA Aptamer_I...
229KB

Image Attribution

Jenna M Gregory

Guidelines

This protocol is designed for users with access to Sequenza immunostaining racks and histological facilities (with fume hood) should be able to carry out all steps over two days.

Before start

Please see appendix for materials required to carry out this protocol.

Materials

See SOP appendix for materials.

Safety warnings

Safety First

Before starting, please ensure all relevant Health & Safety documentation is in order including the following

- COSHH assessment
- Risk assessment
- Safe System of Work
- SOP read and understood

Before start

Please see appendix for materials required to carry out this protocol.

Protocol references

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