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

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🌐 Protocol for "quantification of neurons expressing alpha-synuclein in the non-human primate brain"

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DISCLAIMER

Nothing to be disclosed

ABSTRACT

Here we describe a method based on an AI deep learning algorithm (Aiforia) for the purpose of accurately quantifying the number and location of neurons expressing alpha-synuclein throughout pre-defined regions of interest (cortical and sub-cortical locations) in the non-human primate brain.

Aiforia-based quantification of neurons expressing alpha-synuclein

1 Scan sections to be analyzed in the Aperio CS scanner at a magnification of 20x

2 Upload digitalized sections to the Aiforia cloud (www.aiforia.com).

3 Create a dedicated project for analysis.

4 Select up to 3-4 sections for training the model algorithm, these sections showing different morphologies and intensity levels of alpha-synuclein expression.

5 Train the model algorithm to analyse potential errors.

6 Activate the annotation assistant tool to retrieve additional beneficial inputs that can be added by the platform itself.

7 Repeat steps 5 to 7 while increasing the number of annotations and iterations (>1,000) until the model algorithm has learned to properly identify every single phenotype of alpha-synuclein-expressing neurons.

8 Release the model algorithm.

9 Use the drawing tool to delineate the boundaries of each selected region of interest where positive neurons need to be quantified in every single section of the project.

10 Export obtained raw data to an Excel spreadsheet for statistical analysis.