

**Materials List for:**

# Gene-environment Interaction Models to Unmask Susceptibility Mechanisms in Parkinson's Disease

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## Materials

| Name                                                                  | Company                        | Catalog Number | Comments                  |
|-----------------------------------------------------------------------|--------------------------------|----------------|---------------------------|
| 1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine hydrochloride (MPTP-HCL) | Sigma-Aldrich                  | M0896          | for PD modeling           |
| 4% Formaldehyde (paraformaldehyde) solution, phosphate-buffered (PFA) | American MasterTech Scientific | BUP0157        | for immersion fixation    |
| Perchloric acid ACS reagent, 70% (PCA)                                | Sigma-Aldrich                  | 244252         | for HPLC acid extraction  |
| Tris Base                                                             | Sigma-Aldrich                  | T1503          | for tissue homogenization |
| Ethylenediaminetetraacetic acid disodium salt dihydrate (EDTA)        | Sigma-Aldrich                  | E1644          | for tissue homogenization |
| Protease inhibitor cocktail                                           | Sigma-Aldrich                  | P8340          | for tissue homogenization |
| Phosphatase inhibitor cocktail                                        | Sigma-Aldrich                  | P5726          | for tissue homogenization |
| Sodium Hydroxide (NaOH)                                               | Sigma-Aldrich                  | S5881          | for Lowry protein assay   |
| Sucrose, molecular biology, ≥99.5% (GC)                               | Sigma-Aldrich                  | S0389          | for cryoprotection        |
| Phosphate buffered saline, powder, pH 7.4 (for 0.01 M PBS)            | Sigma-Aldrich                  | P3813          | for IHC                   |
| BCA Protein Assay Kit                                                 | Pierce/Thermo                  | 23225          | for protein determination |
| Novex 12% Tris-Glycine Mini Gels 1.0 mm, 12-well                      | Invitrogen/Life Technologies   | EC60052BOX     | for SDS-PAGE              |
| NuPAGE LDS Sample Buffer (4x)                                         | Invitrogen/Life Technologies   | NP0007         | for SDS-PAGE              |
| Novex Sharp Prestained Protein Standard                               | Invitrogen/Life Technologies   | LC5800         | protein ladder            |
| Glycine                                                               | Sigma-Aldrich                  | G7126          | for SDS-PAGE              |
| Sodium dodecyl sulfate, electrophoresis, 98.5% (SDS)                  | Sigma-Aldrich                  | L3771          | for SDS-PAGE              |
| Methyl Alcohol, Anhydrous, Reagent                                    | American MasterTech Scientific | SPM1057C       | methanol for transfer     |
| Sodium chloride (NaCl), ACS reagent                                   | Sigma-Aldrich                  | S9888          | saline and buffers        |
| Nonfat dry milk powder                                                | Carnation                      | n/a            | for immunoblotting        |
| Ponceau S solution in 5% acetic acid                                  | Sigma-Aldrich                  | P7170          | for immunoblotting        |
| Anti-Tyrosine Hydroxylase (TH), sheep polyclonal                      | Chemicon/Millipore             | AB1542         | for immunofluorescence    |
| Anti-Tyrosine Hydroxylase (TH), rabbit polyclonal                     | Pel-Freez Biologicals          | P40101-0       | for immunoblotting        |
| Anti-β Actin, rabbit                                                  | Sigma-Aldrich                  | A2066          | for immunoblotting        |

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|----------------------------------------------------------------|--------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Anti-Glial Fibrillary Acidic Protein (GFAP), rabbit polyclonal | Chemicon/Millipore             | AB5804      | for immunofluorescence                                                                                                                                                                              |
| Anti-Glial Fibrillary Acidic Protein (GFAP), mouse monoclonal  | Covance Inc.                   | SMI-22R     | for immunoblotting                                                                                                                                                                                  |
| Tween-20                                                       | Sigma-Aldrich                  | P1379       | for immunoblotting                                                                                                                                                                                  |
| Goat Anti-Rabbit IgG (H+L), Peroxidase Conjugated              | Fisher Scientific              | 31462       | for immunofluorescence                                                                                                                                                                              |
| goat anti-sheep, peroxidase conjugated                         | Pierce/Thermo                  | 31480       | for immunofluorescence                                                                                                                                                                              |
| goat anti-mouse, peroxidase conjugated                         | Pierce/Thermo                  | 31430       | for immunofluorescence                                                                                                                                                                              |
| SuperSignal West Pico Chemiluminescent Substrate               | Pierce/Thermo                  | 34078       | for immunoblotting                                                                                                                                                                                  |
| CL-XPosure Film 7 in x 9.5 in                                  | Pierce/Thermo                  | 34089       | for immunoblotting                                                                                                                                                                                  |
| Restore Western Blot Stripping Buffer                          | Pierce/Thermo                  | 21059       | for immunoblotting                                                                                                                                                                                  |
| Citric acid monohydrate, ACS reagent, ≥99.0%                   | Sigma-Aldrich                  | C1909       | for IHC                                                                                                                                                                                             |
| Normal Donkey Serum                                            | Millipore                      | S30-100ML   | for IHC                                                                                                                                                                                             |
| Polyvinylpyrrolidone (PVP)                                     | Sigma-Aldrich                  | P5288       | for IHC                                                                                                                                                                                             |
| Bovine Serum Albumin (BSA), lyophilized                        | Sigma-Aldrich                  | A3294       | for IHC                                                                                                                                                                                             |
| Triton X-100                                                   | Fisher Scientific              | BP151-01    | for IHC                                                                                                                                                                                             |
| Donkey anti-Rabbit IgG, Alexa Fluor 568-labeled                | Invitrogen/Life Technologies   | A10042      | for IHC                                                                                                                                                                                             |
| Donkey Anti-Sheep IgG (H+L), FITC                              | Jackson ImmunoResearch         | 713-095-147 | for IHC                                                                                                                                                                                             |
| VECTASHIELD Hard-Set Mounting Medium with DAPI                 | Vector Laboratories            | H-1500      | for IHC                                                                                                                                                                                             |
| Normal Goat Serum                                              | Millipore                      | S26-100ML   | for IHC                                                                                                                                                                                             |
| VECTASTAIN ABC Kit (Rabbit IgG )                               | Vector Laboratories            | PK-4001     | for IHC; 10 µl each of solutions A and B per 1 ml PBS (per instructions )                                                                                                                           |
| DAB Peroxidase Substrate Kit, 3,3'-diaminobenzidine            | Vector Laboratories            | SK-4100     | for IHC; per 5 ml cold ddH <sub>2</sub> O, add 2 drops buffer stock solution, 2 drops DAB, and 1 drop H <sub>2</sub> O <sub>2</sub> (H <sub>2</sub> O <sub>2</sub> is added immediately before use) |
| Hydrogen peroxide, 30%                                         | Sigma-Aldrich                  | 216763      | for quench step in IHC                                                                                                                                                                              |
| Rabbit anti-Iba1                                               | Biocare Medicals               | CP290A      | for IHC                                                                                                                                                                                             |
| Cresyl Violet Solution, Regular Strength                       | FD Neurotechnologies           | PS102-01    | counterstain for Iba1 IHC                                                                                                                                                                           |
| 95% Ethanol, reagent alcohol                                   | Sigma-Aldrich                  | R8382       | dehydration for IHC                                                                                                                                                                                 |
| 100% Absolute ethanol                                          | Mallinckrodt                   | 7019-10     | dehydration for IHC                                                                                                                                                                                 |
| Acetic acid                                                    | Sigma-Aldrich                  | A6283       | destaining for IHC                                                                                                                                                                                  |
| Xylene                                                         | Sigma-Aldrich                  | 534056      | clearing agent for IHC                                                                                                                                                                              |
| DPX Mountant                                                   | Sigma-Aldrich                  | 06522       | mounting medium for DAB IHC                                                                                                                                                                         |
| O.C.T. Compound - Frozen Section Embedding Medium              | American MasterTech Scientific | EMOCTCS     | embeddium medium for cryostat cutting                                                                                                                                                               |
| Potassium permanganate                                         | Sigma-Aldrich                  | 223468      | to decontaminate DAB solution                                                                                                                                                                       |
| Dopamine hydrochloride                                         | Sigma-Aldrich                  | H8502       | for HPLC                                                                                                                                                                                            |
| 3,4-Dihydroxyphenylacetic acid (DOPAC)                         | Sigma-Aldrich                  | 850217      | for HPLC                                                                                                                                                                                            |

|                                                           |                        |               |                                                        |
|-----------------------------------------------------------|------------------------|---------------|--------------------------------------------------------|
| Homovanillic acid (HVA)                                   | Sigma-Aldrich          | H1252         | for HPLC                                               |
| Perchloric acid (PCA) - 70%                               | Sigma-Aldrich          | 244252        | for HPLC                                               |
| Sodium dihydrogen phosphate monohydrate                   | Sigma-Aldrich          | 71504         | for HPLC                                               |
| Citric acid monohydrate                                   | Sigma-Aldrich          | C1909         | for HPLC                                               |
| 1-Octanesulfonic acid sodium salt (OSA)                   | Sigma-Aldrich          | O8380         | for HPLC                                               |
| EDTA                                                      | Sigma-Aldrich          | E1644         | for HPLC                                               |
| Acetonitrile                                              | EMD                    | AX0145-1      | for HPLC                                               |
| HPLC-grade distilled deionized water (ddH <sub>2</sub> O) | Millipore              |               | for HPLC                                               |
| 0.22 µm GSTF membrane                                     | Millipore              |               | for filtration                                         |
| Corning Netwells                                          | Sigma-Aldrich          | CLS3477       | polystyrene insert with polyester mesh bottom, for IHC |
| Ultrasonic cell disrupter (Soniprep 150)                  | MSE                    | MSE.41371.274 |                                                        |
| Microcentrifuge                                           | Eppendorf              | 5414R         |                                                        |
| ESA MD-150 reverse-phase column                           | ESA                    |               |                                                        |
| HPLC Pump (Ultimate 3000)                                 | Dionex                 | ISO-3100BM    |                                                        |
| HPLC Autosampler (Ultimate 3000)                          | Dionex                 | WPS-3000TSL   |                                                        |
| Electrochemical detector                                  | ESA                    | Coulochem III |                                                        |
| Guard Cell                                                | ESA                    | 5020          |                                                        |
| Analytical Cell                                           | ESA                    | 5011A         |                                                        |
| Chromeleon software                                       | Dionex                 |               |                                                        |
| Eclipse E400                                              | Nikon                  | E400          | light/fluorescent microscope                           |
| Disposable mouse cage                                     | Ancare                 | N10HT         |                                                        |
| Microfilter top                                           | Ancare                 | N10MBT        |                                                        |
| 5-LOX- deficient mice                                     | The Jackson Laboratory | 004155        |                                                        |
| 12/15-LOX-deficient mice                                  | The Jackson Laboratory | 002778        |                                                        |