A

NI-202.3G12-VHB1 (variable heavy chain sequence VHB1; SEQ ID NO: 3)

```
FR1---------------------------CDR1-FR2-----------CDR2---------
EVQLVQSGAEVKKPGASVRLSCRASGYNFIDFHIHWVRQAPGEGLEWMGWSNPQSGNSSSAQ

----FR3-------------------------------CDR3--------JH---------
RFQGRVTMTTDTSMSAAYMDLNWLTLDDTAVYYCTRPHDGAGNYRFDTWGQGTLVTVSS
```

NI-202.3G12-VHB1-GL (variable heavy chain sequence VHB1, aligned to the Germ Line Sequence; SEQ ID NO: 4)

```
FR1---------------------------CDR1-FR2-----------CDR2---------
QVQLVQSGAEVKKPGASVRLSCRASGYNFIDFHIHWVRQAPGEGLEWMGWSNPQSGNSSSAQ

----FR3-------------------------------CDR3--------JH---------
RFQGRVTMTTDTSMSAAYMDLNWLTLDDTAVYYCTRPHDGAGNYRFDTWGQGTLVTVSS
```

NI-202.3G12-VLc1 (variable light chain sequence VLc1, SEQ ID NO: 6)

```
FR1--------------------CDR1-------FR2------------CDR2---FR3----
QSVLTQPPSVSVAPGQTARITCSGDALPKHYAHWYQQKPGQVPIVVIYKDTERPSGIPERFS

-------------------------CDR3-------JK--------
GSTSGTTVTLTISGVQAEDEAHYYCQSADVSSTYVVFGGGTKLTVL
```

NI-202.3G12-VLc1-GL (variable light chain sequence VLc1, aligned to the Germ Line Sequence; SEQ ID NO: 7)

```
FR1--------------------CDR1-------FR2------------CDR2---FR3----
SYELTQPPSVSVAPGQTARITCSGDALPKHYAHWYQQKPGQVPIVVIYKDTERPSGIPERFS

-------------------------CDR3-------JK--------
GSTSGTTVTLTISGVQAEDEAHYYCQSADVSSTYVVFGGGTKLTVL
```

Fig. 1

B

NI-202.12F4-VHA1b (variable heavy chain sequence VHA1b; SEQ ID NO: 9)

```
FR1---------------------------CDR1-FR2-----------CDR2---------
EVQLVQSGGGLVEPGGSLRLSCAVSGFDFEKAWMSWVRQAPGQGLQWVARIKSTADGGTTSY

------FR3-------------------------------CDR3----JH---
AAPVEGRFIISRDDSRNMLYLQMNSLKTEDTAVYYCTSAHWGQGTLVTVSS
```

NI-202.12F4-VHA1b-GL (GL (variable heavy chain sequence VHA1b, aligned to the Germ Line Sequence; SEQ ID NO: 10)

```
FR1---------------------------CDR1-FR2-----------CDR2---------
EVQLVESGGGLVEPGGSLRLSCAVSGFDFEKAWMSWVRQAPGQGLQWVARIKSTADGGTTSY

------FR3-------------------------------CDR3----JH---
AAPVEGRFIISRDDSRNMLYLQMNSLKTEDTAVYYCTSAHWGQGTLVTVSS
```

NI-202.12F4-VLa1 (variable light chain sequence VLa1; SEQ ID NO: 12)

```
FR1--------------------CDR1--------FR2-------------CDR2---FR3----
QSVLTQPPSVSVSPGQTARITCSGEALPMQFAHWYQQRPGKAPVIVVYKDSERPSGVPERFS

-------------------------CDR3--------JK---------
GSSSGTTATLTITGVQAEDEADYYCQSPDSTNTYEVFGGGTKLTVL
```

NI-202.12F4-VLa1-GL (variable light chain sequence VLa1, aligned to the Germ Line Sequence; SEQ ID NO: 13)

```
FR1--------------------CDR1--------FR2-------------CDR2---FR3----
SYELTQPPSVSVSPGQTARITCSGEALPMQFAHWYQQRPGKAPVIVVYKDSERPSGVPERFS

-------------------------CDR3--------JK---------
GSSSGTTATLTITGVQAEDEADYYCQSPDSTNTYEVFGGGTKLTVL
```

Fig. 1 (continued)

C

NI-202.3D8-VHE1 (variable heavy chain sequence VHE1; SEQ ID NO: 15)

```
FR1--------------------------CDR1-FR2----------CDR2---------
EVQLVESGGGVVQPGRSLRLSCAASGFTFSTYAISWVRQAPGKGLEWVAIISNDGSRKYYAD

----FR3------------------------------CDR3----------JH---------
SVKGRFTISRDNSRDTLDLEMNSLRDEDTAVYYCAKKRGTYASRCKAFDFWGQGTLVTVSS
```

NI-202.3D8-VHE1-GL (variable heavy chain sequence VHE1, aligned to the Germ Line Sequence; SEQ ID NO: 16)

```
FR1--------------------------CDR1-FR2----------CDR2---------
QVQLVESGGGVVQPGRSLRLSCAASGFTFSTYAISWVRQAPGKGLEWVAIISNDGSRKYYAD

----FR3------------------------------CDR3----------JH---------
SVKGRFTISRDNSRDTLDLEMNSLRDEDTAVYYCAKKRGTYASRCKAFDFWGQGTLVTVSS
```

NI-202.3D8-VKa1 (variable light chain sequence VKa1; SEQ ID NO: 18)

```
FR1-------------------CDR1-------FR2-----------CDR2---FR3---
DIQLTQSPSTLSASVGDRVTITCRASQSISGWLAWYQQKPGKAPKLLIYDASNLESGVPSRF

-------------------------CDR3----JK--------
SGSGSGTEFTLTISSLQPDDFATYYCQQYDNYWTFGQGTKVEIK
```

NI-202.3D8-VKa1-GL (variable light chain sequence VKa1, aligned to the Germ Line Sequence; SEQ ID NO: 19)

```
FR1-------------------CDR1-------FR2-----------CDR2---FR3---
DIQMTQSPSTLSASVGDRVTITCRASQSISGWLAWYQQKPGKAPKLLIYDASNLESGVPSRF

-------------------------CDR3----JK--------
SGSGSGTEFTLTISSLQPDDFATYYCQQYDNYWTFGQGTKVEIK
```

Fig. 1 (continued)

D

NI-202.3D8-VKc1 (variable light chain sequence VKc1; SEQ ID NO: 21)

```
FR1--------------------CDR1-------FR2------------CDR2---FR3---
EIVMTQSPSSLSASIGDRVTFTCRASHDISNYLAWFRQQPGKAPKSLIYAASSLQSGVPSRF
--------------------------CDR3-----JK--------
SASGSGTDFTLTISSLQPEDFATYYCVQYRTYPLTFGQGTRLEIK
```

NI-202.3D8-VKc1-GL (variable light chain sequence VKc1, aligned to the Germ Line Sequence; SEQ ID NO: 22)

```
FR1--------------------CDR1-------FR2------------CDR2---FR3---
DIQMTQSPSSLSASIGDRVTFTCRASHDISNYLAWFRQQPGKAPKSLIYAASSLQSGVPSRF

--------------------------CDR3-----JK--------
SASGSGTDFTLTISSLQPEDFATYYCVQYRTYPLTFGQGTRLEIK
```

Fig. 1 (continued)

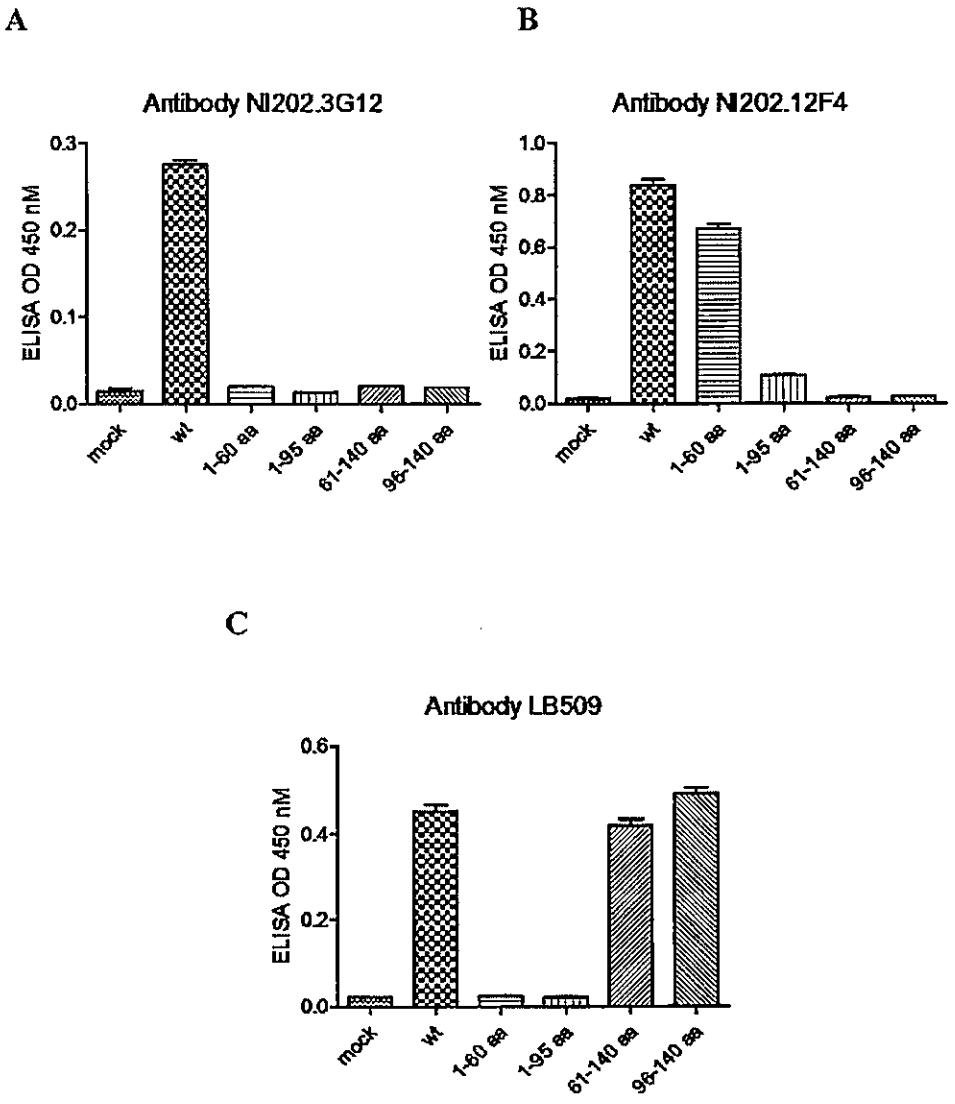
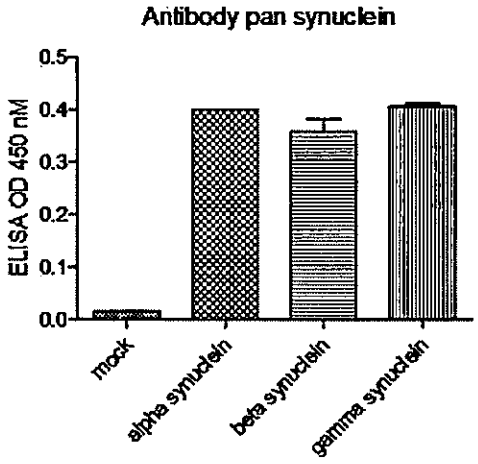

A
Antibody NI202.3G12
ELISA OD 450 nM
0.3
0.2
0.1
0.0
mock
wt
1-60 aa
1-95 aa
61-140 aa
96-140 aa
B
Antibody NI202.12F4
ELISA OD 450 nM
1.0
0.8
0.6
0.4
0.2
0.0
mock
wt
1-60 aa
1-95 aa
61-140 aa
96-140 aa
C
Antibody LB509
ELISA OD 450 nM
0.6
0.4
0.2
0.0
mock
wt
1-60 aa
1-95 aa
61-140 aa
96-140 aa

Fig. 2

A


Antibody pan synuclein
ELISA OD 450 nM
0.5
0.4
0.3
0.2
0.1
0.0
mock
alpha synuclein
beta synuclein
gamma synuclein

A B

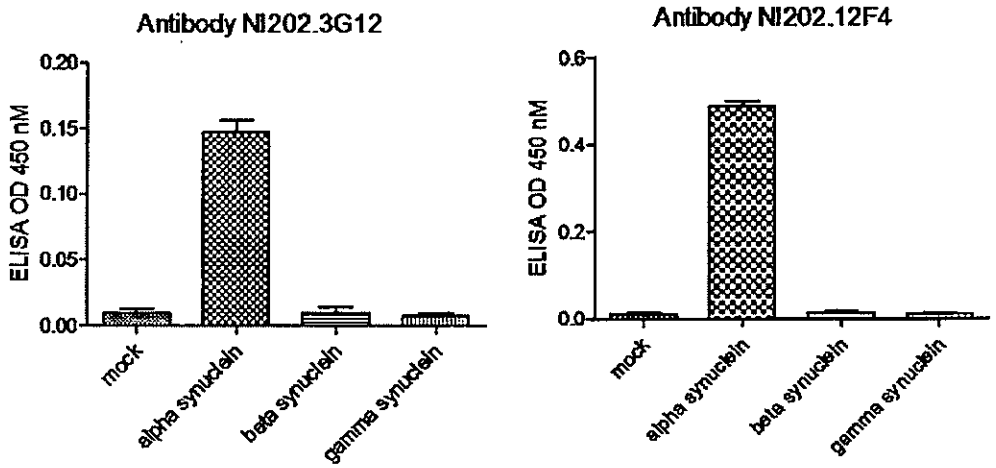

Antibody NI202.3G12
ELISA OD 450 nM
0.20
0.15
0.10
0.05
0.00
mock
alpha synuclein
beta synuclein
gamma synuclein
Antibody NI202.12F4
ELISA OD 450 nM
0.6
0.4
0.2
0.0
mock
alpha synuclein
beta synuclein
gamma synuclein

Fig. 3

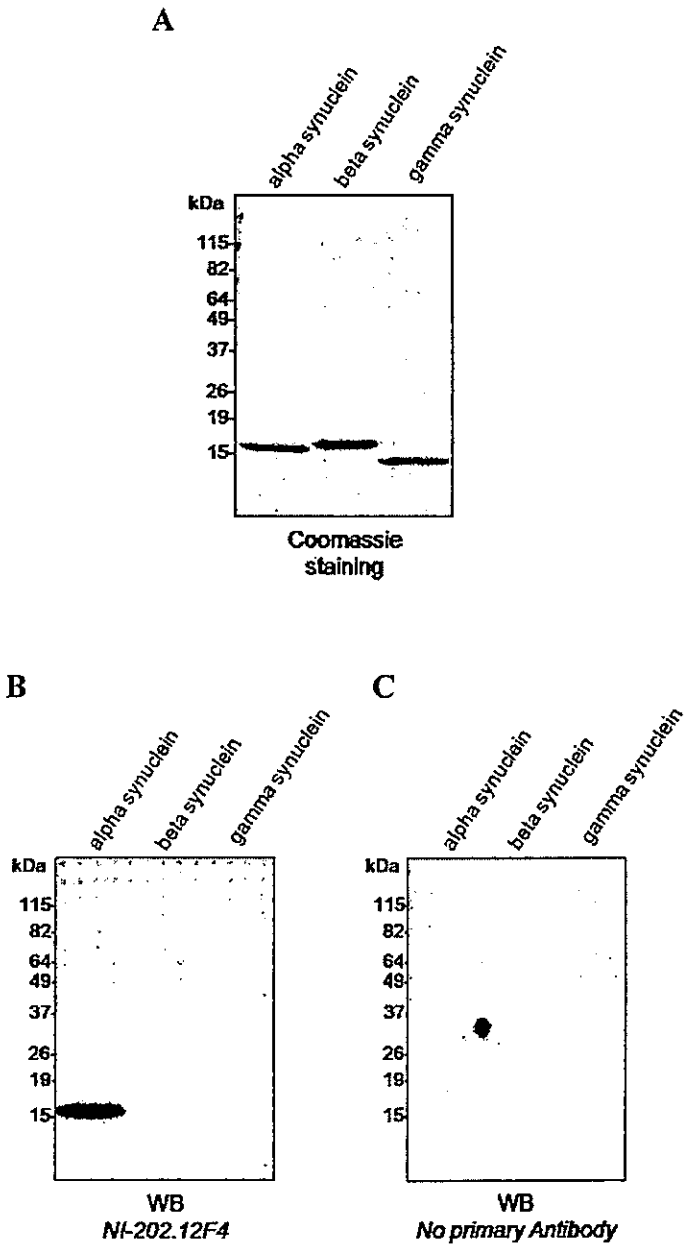

A
alpha synuclein
beta synuclein
gamma synuclein
kDa
115
82
64
49
37
26
19
15
Coomassie staining
B
alpha synuclein
beta synuclein
gamma synuclein
kDa
115
82
64
49
37
26
19
15
WB
NI-202.12F4
C
alpha synuclein
beta synuclein
gamma synuclein
kDa
115
82
64
49
37
26
19
15
WB
No primary Antibody

Fig. 4

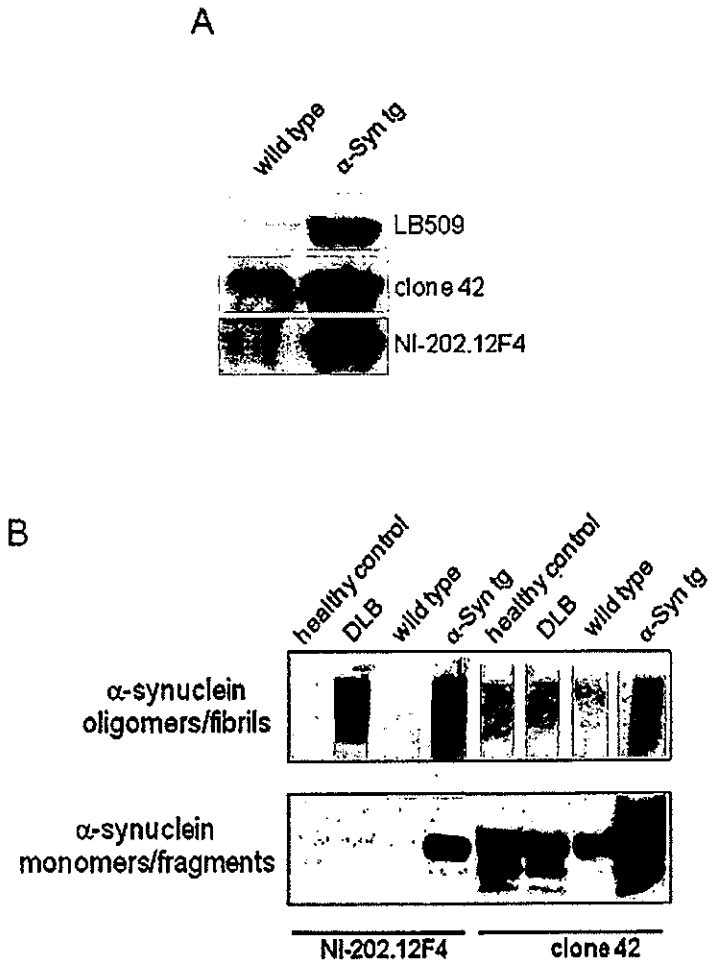

A
wild type
α-Syn tg
LB509
clone 42
NI-202.12F4
B
healthy control
DLB
wild type
α-Syn tg
healthy control
DLB
wild type
α-Syn tg
α-synuclein
oligomers/fibrils
α-synuclein
monomers/fragments
NI-202.12F4
clone 42

Fig. 5

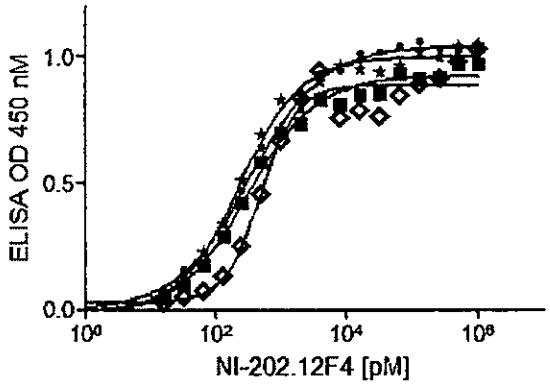


Fig. 6

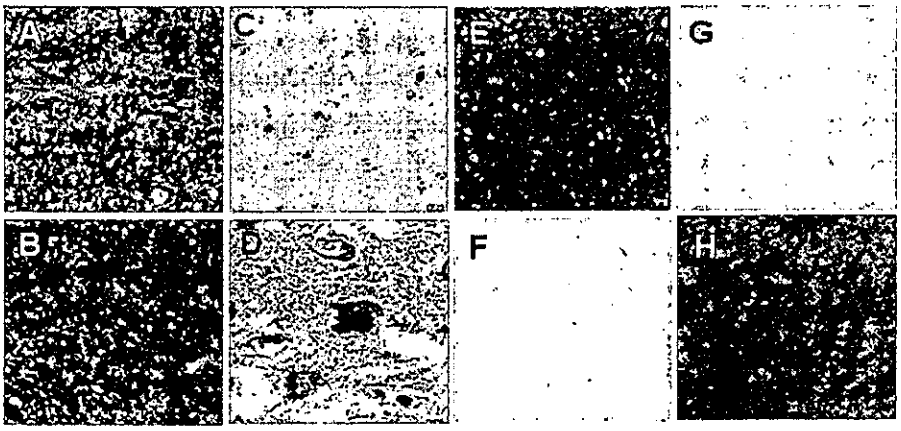


Fig. 7

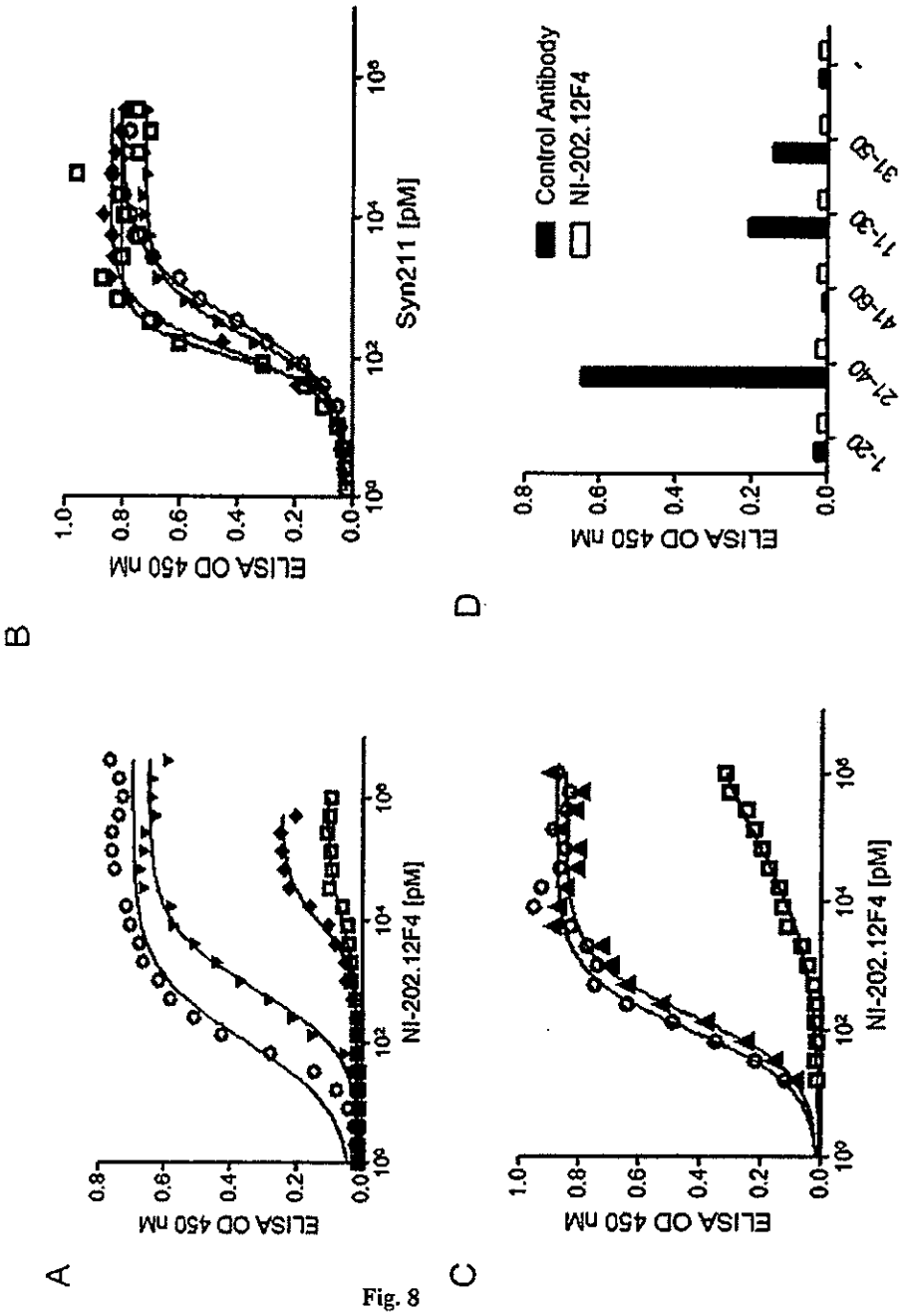

A
ELISA OD 450 nM
Ni-202.12F4 [pM]
B
ELISA OD 450 nM
Syn211 [pM]
C
ELISA OD 450 nM
Ni-202.12F4 [pM]
D
Control Antibody
Ni-202.12F4
ELISA OD 450 nM
1-20
21-40
41-60
11-30
31-50

Fig. 8

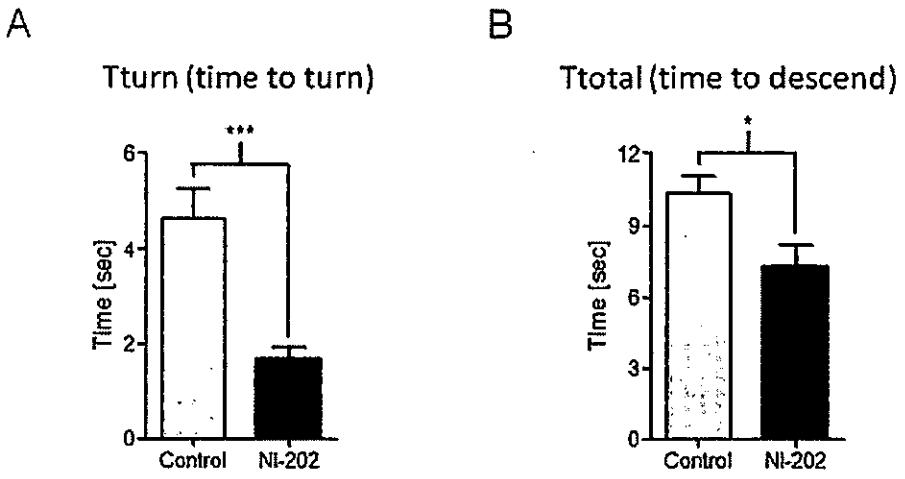

A
Tturn (time to turn)
***
Time [sec]
6
4
2
0
Control
NI-202
B
Ttotal (time to descend)
*
Time [sec]
12
9
6
3
0
Control
NI-202

Fig. 9

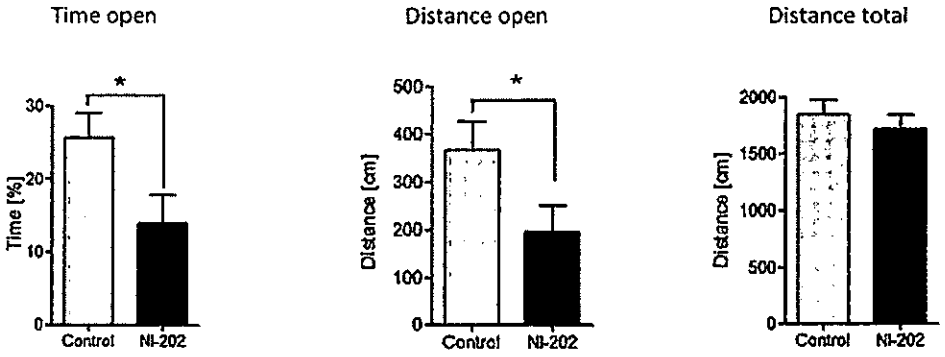

Time open
*
Time [%]
30
20
10
0
Control
NI-202
Distance open
*
Distance [cm]
500
400
300
200
100
0
Control
NI-202
Distance total
Distance [cm]
2000
1500
1000
500
0
Control
NI-202

Fig. 10

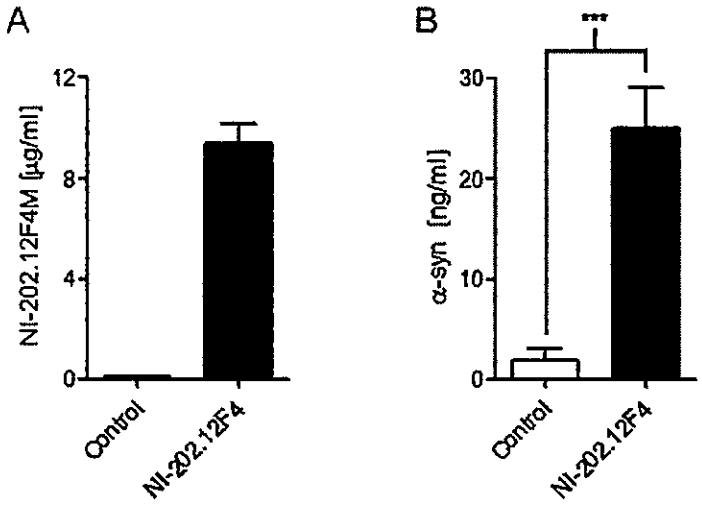

A
NI-202.12F4M [µg/ml]
12
8
4
0
Control
NI-202.12F4
B
***
α-syn [ng/ml]
30
20
10
0
Control
NI-202.12F4

Fig. 11