# CNS Effects of Single and Multiple Doses of CST-101, CST-103, and CST-109

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To explore the effects of CST-101, CST-103, and CST-109 on CNS functions that are relevant to neurodegenerative disorders.

| | |
|---|---|
| **Ethische beoordeling** | Positief advies |
| **Status** | Werving nog niet gestart |
| **Type aandoening** | - |
| **Onderzoekstype** | Interventie onderzoek |

## Samenvatting

### ID

NL-OMON22058

**Bron**
NTR

**Verkorte titel**
CHDR1915

**Aandoening**

Parkinson's Disease

### Ondersteuning

**Primaire sponsor:** CuraSen Therapeutics, Inc.
**Overige ondersteuning:** CuraSen Therapeutics, Inc.

### Onderzoeksproduct en/of interventie

### Uitkomstmaten

**Primaire uitkomstmaten**

1. Measures of CNS activity captured in the NeuroCart, which include:
a. Saccadic Eye Movement
b. Smooth pursuit eye movement

c. Adaptive tracking
d. Body sway
e. Visual Verbal Learning Test with emotional Valence
f. Stroop test
g. Visual analogue scale (VAS) Bond and Lader
h. VAS Bowdle
i. Electroencephalography (EEG)
j. Pupillometry
k. Dual Task Test
l. Choice Reaction Time Test
m. N-back Test

# Toelichting onderzoek

### Achtergrond van het onderzoek

This study undertakes an assessment of the effects of CST-101, CST-103, and CST-109 on measures of CNS function that are relevant to neurodegenerative disorders.

### Doel van het onderzoek

To explore the effects of CST-101, CST-103, and CST-109 on CNS functions that are relevant to neurodegenerative disorders.

### Onderzoeksopzet

Part A:
Four visits, each stay starting on day -1 until day 2, and one follow-up visit.

Part B:
Two visits, each stay starting on day -1 until day 8, and one follow-up visit

Part C:
Stay on day -1 until day 2 and day 7 until day 8 with at home drug administration on day 3 until day 6, and a follow-up visit on day 15

### Onderzoeksproduct en/of interventie

CST-101, CST-103, CST-109 and placebo

# Contactpersonen

## Publiek

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## Wetenschappelijk

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# Deelname eisen

## Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Main inclusion criteria healthy volunteers:
1. Males and females aged 40-55 years (inclusive) at the time of informed consent
2. Unless confirmed to be azoospermic (vasectomized or secondary to medical cause), males must agree to use a male condom plus partner use of an additional contraceptive method throughout the study when having penilevaginal
intercourse with a woman of childbearing potential who is not currently pregnant. Note: Men with a pregnant or breastfeeding partner must agree to remain abstinent from penile-vaginal intercourse or use a condom during each episode of penile-vaginal penetration.
3. Females of childbearing potential (i.e., not postmenopausal or surgically sterile) must agree to one of the following from start of Screening through 90 days after the last study drug administration:
a. use two effective methods of birth control, including hormonal prescription oral contraceptives, contraceptive injections, contraceptive patch, contraceptive ring, intrauterine device, barrier method (e.g., condoms, diaphragm, or cervical cap) or spermicidal foam, cream or gel, or
b. practice complete abstinence, or
c. monogamous relationship with a male partner of confirmed sterility.
4. Body weight equal to or greater than 50 kg and body mass index (BMI) between 18 and 35 kg/m2, inclusive at Screening
5. Participant is free from clinically significant illness or disease as determined by medical and surgical history, physical examination, 12-lead ECG and clinical laboratory assessments

conducted at Screening and Day -1 as
agreed to by the Investigator and Medical Monitor.
6. No current use of any prescription medication, over-the-counter medication, or herbal supplements/products during Screening or throughout study, unless approved by both the Investigator and the Sponsor
7. Able to understand and sign the written Informed Consent Form (ICF)
8. Able to communicate well with the Investigator in the Dutch language and willing to follow the protocol requirements and comply with protocol restrictions.

Main Inclusion criteria Parkinson patients:
1. Males and females aged 40-75 years (inclusive) at the time of informed consent
2. Unless confirmed to be azoospermic (vasectomized or secondary to medical cause), males must agree to use a male condom plus partner use of an additional contraceptive method throughout the study when having penilevaginal
intercourse with a woman of childbearing potential who is not currently pregnant. Note: Men with a pregnant or breastfeeding partner must agree to remain abstinent from penile-vaginal intercourse or use a condom during each episode of penile-vaginal penetration.
3. Females of childbearing potential (i.e., not postmenopausal or surgically sterile) must agree to one of the following from start of Screening through 90 days after the last study drug administration:
a. use two effective methods of birth control, including hormonal prescription oral contraceptives, contraceptive injections, contraceptive patch, contraceptive ring, intrauterine device, barrier method (e.g., condoms, diaphragm, or cervical cap) or spermicidal foam, cream or gel, or
b. practice complete abstinence, or
c. monogamous relationship with a male partner of confirmed sterility.
4. Patient who has Parkinson’s disease (PD) defined by the cardinal sign, bradykinesia, plus the presence of at least 1 of the following: resting tremor, rigidity, or impairment of postural reflexes, and without any other known or suspected cause of Parkinsonism
5. Hoehn & Yahr stage assessed as ≤3 during Screening
6. Mini-Mental State Examination (MMSE) score ≥26 assessed during Screening
7. If taking medications for PD, patients on stable (≥3 months prior to Day 1) levodopa/ carbidopa or levodopa/benserazide are allowed. Patients stable on dopamine agonists or catechol-O-methyltransferase inhibitors for 60 days are also allowed. Patients are allowed to use β-AR blockers for tremors up to 48 hours
before NeuroCart testing. Patients on monoamine oxidase type B inhibitors are not allowed.
8. Stable medical conditions for 3 months prior to Screening visit (e.g., hypertension, dyslipidemia
9. Use of vitamin E (up to 400 IU daily), estrogens, aspirin (81-300 mg daily), blood pressure medications (except for adrenergic agents), and cholesterol-lowering agents is allowed if treatment is stable for 3 months prior to Screening.
10. In generally good health, in the opinion of the Investigator, based on medical and surgical history, BMI, physical examination, vital signs, 12-lead ECG, and laboratory values, including hematology and chemistry values
11. Clinical laboratory values within normal limits or, if abnormal, must be judged to be clinically insignificant by the Investigator
12. Able to understand and sign the written Informed Consent Form (ICF)

13. Able to communicate well with the Investigator in the Dutch language and willing to follow the protocol requirements and comply with protocol restrictions

## Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

Main exclusion criteria all volunteers:
1. History of any clinically significant disease, as assessed by the Investigator, including cardiovascular, hepatic, renal, pulmonary, hematologic, gastrointestinal, endocrine, immunologic, dermatologic, neurologic, metabolic, psychological, musculoskeletal disease, or malignancies
2. Participants with a history (in the 5 years prior to Screening) of malignant disease, including solid tumors and hematologic malignancies (except basal cell and squamous cell carcinomas of the skin that have been completely
excised and are considered cured)
3. A calculated creatinine clearance of ≤60 mL/min according to the Cockcroft-Gault equation
4. Positive screening test for human immunodeficiency virus (HIV)
5. Positive screening test for hepatitis C antibody (HCV Ab) or current hepatitis B infection (defined as positive for hepatitis B surface antigen [HBsAg] at Screening). Participants with immunity to hepatitis B (defined as negative HBsAg and positive hepatitis B surface antibody [HBsAb]) are eligible to participate in the study.
6. History of drug or alcohol abuse ≤12 months prior to Screening, or current use of more than 21 units of alcohol per week
7. History of nicotine use ≤6 months prior to Screening
8. A positive test for drugs of abuse or alcohol during Screening (a repeat per Investigator discretion is allowed if initial screening is positive) or prior to Day 1 (unless the prescribed drugs are thought to result in a positive test for
drug abuse)
9. Unwilling or unable to abstain from alcohol from 2 days prior to Day 1 until end-of-study (EOS) assessments
10. Is demonstrating excess xanthine consumption (more than 8 cups of coffee or equivalent per day)
11. Clinically significant abnormal clinical laboratory test values, as determined by the Investigator, or any value of alanine aminotransferase (ALT) or aspartate aminotransferase (AST) that is more than 1.5 x the upper limit of normal, or any out-of-range value for serum sodium or potassium that is, in the opinion of the Investigator, clinically significant. Screening tests may be repeated once at the discretion of the Investigator.
12. Clinically significant laboratory or ECG abnormality that could be a safety issue in the study, including QT using Bazett’s or Fredericia’s correction of QT interval (QTcB or QTcF) >450 msec for males and >470 msec for females
13. History of angina, uncontrolled hypertension, heart failure, coronary insufficiency, cardiac arrythmias, diabetes mellitus, hyperthyroidism, convulsion disorders, bronchial asthma, sinus bradycardia and greater than first degree
conduction block, cardiogenic shock 14. Participation in an investigational drug or device study within 3 months prior to first dosing, or current enrollment in any other study treatment

or disease study
15. Prior treatment with any β-AR agonists or β-AR blockers within the month prior to study enrollment for healthy subjects
16. Donation or loss of ≥500 mL of blood or blood products within 30 days prior to dosing
17. Any other reason for which the Investigator considers it is not in the best interest of the participant to undertake the study.

# Onderzoeksopzet

## Opzet

| | |
|---|---|
| Type: | Interventie onderzoek |
| Onderzoeksmodel: | Cross-over |
| Toewijzing: | Gerandomiseerd |
| Blindering: | Dubbelblind |
| Controle: | Placebo |

## Deelname

Nederland

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|---|---|
| Status: | Werving nog niet gestart |
| (Verwachte) startdatum: | 02-09-2019 |
| Aantal proefpersonen: | 52 |
| Type: | Verwachte startdatum |

## Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

**Wordt de data na het onderzoek gedeeld:** Nee

# Ethische beoordeling

Positief advies

| | |
|---|---|
| Datum: | 06-09-2019 |
| Soort: | Eerste indiening |

# Registraties

## Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 48526
Bron: ToetsingOnline
Titel:

## Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

## In overige registers

| Register | ID |
|---|---|
| NTR-new | NL8002 |
| CCMO | NL70324.056.19 |
| OMON | NL-OMON48526 |

# Resultaten