

## Supporting Information – Checklists phase 1 and 2.

| NC3Rs Survey of Experimental design and reporting |                                                         |           |     |    |       |          |    |
|---------------------------------------------------|---------------------------------------------------------|-----------|-----|----|-------|----------|----|
| Quality of Reporting Checklist (Phase 1)          |                                                         |           |     |    |       |          |    |
| Paper Number:                                     |                                                         | Assessor: |     |    | Date: |          |    |
| (1)                                               | Is the purpose of the study stated in the introduction? |           |     |    | No    | Yes      | ?? |
| (2)                                               | Number of experiments                                   | 1         | 2   | 3  | 4     | >4       | ?? |
| (3)                                               | Sex                                                     |           |     |    |       |          |    |
|                                                   | (a) Is sex reported?                                    |           |     |    | No    | Yes      | ?? |
|                                                   | (b) Sex                                                 |           | M   |    | F     | Both     | ?? |
| (4)                                               | Strains (rodents) and species (primates)                |           |     |    |       |          |    |
|                                                   | (a) Is strain or species reported?                      |           |     |    | No    | Yes      | ?? |
|                                                   | (b) Number of strains or species reported?              |           |     |    | 1     | >1       | ?? |
| (5)                                               | Age and Weight                                          |           |     |    |       |          |    |
|                                                   | (a) Is age recorded?                                    |           |     |    | No    | Yes      | ?? |
|                                                   | (b) Is weight recorded (rodents)?                       |           |     |    | No    | Yes      | ?? |
| (6)                                               | Experimental design                                     |           |     |    |       |          |    |
|                                                   | (a) Number of design factors                            |           |     |    |       | ??       |    |
|                                                   | (b) Number of other (non-design) factors                |           |     |    |       | ??       |    |
|                                                   | (c) Number of treatment (design) groups                 |           |     |    |       | ??       |    |
|                                                   | (d) Is a factorial design used?                         |           |     |    | No    | Yes      | ?? |
| (7)                                               | Type of treatment or procedure (state)                  |           |     |    |       | ??       |    |
| (8)                                               | Type of experiment                                      |           |     |    |       |          |    |
|                                                   | (a) Between subject                                     |           |     |    | No    | Yes      | ?? |
|                                                   | (b) Within subject                                      |           |     |    | No    | Yes      | ?? |
| (9)                                               | Animal number records (methods section)                 |           |     |    | Exact | Estimate | ?? |
|                                                   | (a) Total number of animals (methods section)           |           |     |    |       | ??       |    |
| (10)                                              | Animal number records (results section)                 |           |     |    | Exact | Estimate | ?? |
|                                                   | (a) Total number of animals (results section)           |           |     |    |       | ??       |    |
| (11)                                              | Is randomisation stated as used?                        |           |     |    | No    | Yes      | ?? |
| (12)                                              | Are measurements taken blind?                           |           |     |    | No    | Yes      | ?? |
| (13)                                              | Numerical data presented?                               |           |     |    | No    | Yes      | ?? |
| (14)                                              | No. of dependent variables (outcomes)                   |           |     |    |       |          |    |
|                                                   | (a) Qualitative                                         | 0         | 1   | 2  | 3     | >3       | ?? |
|                                                   | (b) Quantitative                                        | 0         | 1   | 2  | 3     | >3       | ?? |
| (15)                                              | Statistical methods                                     |           |     |    |       |          |    |
|                                                   | (a) Reported in materials and methods section           |           |     |    | No    | Yes      | ?? |
|                                                   | (b) Reported in results section                         |           |     |    | No    | Yes      | ?? |
| (16)                                              | Method of statistical analysis                          |           |     |    |       |          |    |
|                                                   | (a) None                                                |           |     |    | No    | Yes      | ?? |
|                                                   | (b) Chi-squared / Fisher's exact test                   |           |     |    | No    | Yes      | ?? |
|                                                   | (c) T-test                                              |           |     |    | No    | Yes      | ?? |
|                                                   | (d) Mann-Whitney / Wilcoxon                             |           |     |    | No    | Yes      | ?? |
|                                                   | (e) ANOVA                                               |           |     |    | No    | Yes      | ?? |
|                                                   | (f) Correlation                                         |           |     |    | No    | Yes      | ?? |
|                                                   | (g) Regression                                          |           |     |    | No    | Yes      | ?? |
|                                                   | (h) Other/s (state)                                     |           |     |    | No    | Yes      | ?? |
|                                                   | (i) Unknown / Uncertain                                 |           |     |    | No    | Yes      | ?? |
| (17)                                              | Primary outcomes presented with                         | SD        | SEM | CI | None  | ??       |    |
| (18)                                              | Source of funding (state)                               |           |     |    |       | ??       |    |

| NC3Rs Survey of Experimental Design and Reporting                       |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
|-------------------------------------------------------------------------|--|--|--|-----------|--|--|--|----------|-----|---------|----|------------|----|-----------|-----|----|
| Quality of Analysis and Design Checklist (Phase 2)                      |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| Paper Number:                                                           |  |  |  | Assessor: |  |  |  | Date:    |     |         |    |            |    |           |     |    |
| (1) Are there clearly stated hypotheses?                                |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (2) Is the main experiment clearly distinguished?                       |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (3) Design methods                                                      |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (a) Is the randomisation method stated?                                 |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (b) Is blocking used?                                                   |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (4) Is the experimental unit correctly identified?                      |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (5) Is there evidence of pseudoreplication?                             |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (6) Sample size                                                         |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (a) Is the sample size justified in the methods section?                |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (b) Are there equal numbers per treatment group?                        |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (c) If not is this justified?                                           |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (7) Sizes of treatment groups                                           |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (a) Number of animals per treatment group (methods section)             |  |  |  |           |  |  |  |          |     | ??      |    |            |    |           |     |    |
| (b) Number of animals per treatment group (results section)             |  |  |  |           |  |  |  |          |     | ??      |    |            |    |           |     |    |
| (8) Data completeness                                                   |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (a) Are data omitted?                                                   |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (b) Are data not collected?                                             |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (c) Are omissions and data not collected explained?                     |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (9) Are numbers of units stated in all figures and tables?              |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (10) Subjective scores                                                  |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (a) Are subjective scores used (histology)?                             |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (b) If so are they done blind?                                          |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (11) Are inferential methods used?                                      |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (12) Statistical methods                                                |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
|                                                                         |  |  |  |           |  |  |  | Correct? |     | Robust? |    | Efficient? |    | Relevant? |     |    |
|                                                                         |  |  |  |           |  |  |  | No       | Yes | ??      | No | Yes        | ?? | No        | Yes | ?? |
| (a) None                                                                |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (b) Chi-squared / Fisher's exact test                                   |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (c) T-test                                                              |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (d) Mann-Whitney / Wilcoxon                                             |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (e) ANOVA                                                               |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (f) Correlation                                                         |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (g) Regression                                                          |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (h) Other/s (state)                                                     |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (i) Unknown / Uncertain                                                 |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (13) Data transformation                                                |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (a) Is there evidence of heterogeneity of variance?                     |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (b) If so were data transformed or non-parametric method used?          |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (14) Number of degrees of freedom for residual?                         |  |  |  |           |  |  |  |          |     | ??      |    |            |    |           |     |    |
| (15) Are there any obvious errors of calculation? (describe)            |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (16) Graphs and tables                                                  |  |  |  |           |  |  |  |          |     |         |    |            |    |           |     |    |
| (a) Are graphs and tables clearly titled?                               |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (b) Are graphs and tables clearly labelled?                             |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (c) Are graphs appropriate (would tables be better)?                    |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (d) Are tables appropriate (would graphs be better)?                    |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |
| (e) Are graphs or tables showing raw data for individual animals given? |  |  |  |           |  |  |  | No       | Yes | ??      |    |            |    |           |     |    |

|                                                                                                  |    |     |    |
|--------------------------------------------------------------------------------------------------|----|-----|----|
| (17) Is the number of treatment groups appropriate?                                              | No | Yes | ?? |
| (18) Is the experimental design appropriate and does it efficiently use the resources available? | No | Yes | ?? |
| (19) Are the conclusions drawn justified by results?                                             | No | Yes | ?? |
| (20) Would a different analysis make any difference to the conclusions?                          | No | Yes | ?? |

(21) Other comments:

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