Appendix A: Database variables

Variable	Possible answers	Type
1 Study design		
experimental replication?	yes no	nominal
number of replications	number	metric
strategy of analysis of replications	representative pooled (other)	nominal
control group?	yes no (other)	nominal
experimental unit	single animal litter cage (other)	nominal
2 Sample size		
number of experimental units per group	numbers	metric
number of animals per group	numbers	metric
total number of animals	number	metric
precision of total number of animals	exact fuzzy	ordinal
sample size calculation?	yes no	nominal
power	number	metric
significance level	number	metric
effect size	number	metric
directionality	one-sided two-sided	nominal
3 Inclusion and exclusion criteria		
inclusion and exclusion criteria	text	string
time of establishment of inclusion/exclusion criteria	a priori a posteriori none used	nominal
4 Randomisation		
randomisation?	done stated as not done	nominal
method used to generate randomisation sequence	text	string
controlling of confounders?	strategy described confounders not controlled	nominal
5 Blinding/Masking		
blinding?	blinding done blinding not done	nominal
6 Outcome measures		
primary outcome(s)	text	string
secondary outcome(s)	text	string

7 Statistical methods		
methods used named?	yes no	nominal
methods used	t-Test paired t-Test unpaired ANOVA one way ANOVA two way Kruskal Wallis Mann Whitney U (Willcoxon) chi square log rank (other)	multiple choice
adjustment made for multiple comparison?	yes no irrelevant	nominal
requirements discussed?	yes no	nominal
limitations discussed?	yes no	nominal
software used named?	yes no	nominal
software used	GraphPad PRISM SPSS SAS R Excel nQuery G-Power GINGER (other)	multiple choice
8 Experimental animals		
animal species	text	string
animal strain	text	string
sex	female male whatever (other)	nominal
minimum age	number	metric
time unit for minimum age	days weeks months years	ordinal
maximum age	number	metric
time unit for maximum age	days weeks months years	ordinal

13 Objectives		
primary reasearch question	text	string
type of study	confirmatory exploratory setup training not identifiable (other)	nominal
15 Housing and husbandry		
housing conditions specified?	yes no	nominal
16 Animal care and monitoring		
steps taken to reduce animal suffering?	yes no	nominal
humane endpoints established?	yes no	nominal
19 Protocol registration		
protocol prepared before study?	protocol registered protocol not registered no protocol	nominal
22 Severity of animal suffering		
legal categorization of animal suffering	non-recovery severe moderate mild	ordinal
23 Biostatistician		
statistics institute involved?	yes no	nominal
24 Classification		
research field(s)	text	string

Where applicable fields have the option to be “not stated” indicating, that this item was not mentioned in the application at all. The option “(other)” always represents a string input for including values not considered when designing the database.

Appendix B: Outline of web interface

1 Study design

For each experiment, provide brief details of study design including:

- Are there multiple replications of the experiment?
  O yes
  O no

- If yes, how many replications?
  [___]

- What is the used strategy of analysis for the experimental replication?
  O representative
  O pooled
  O not stated
  O other

- if other, provide details:
  [___]

- The groups being compared, including control groups. If no control group is used, the rationale should be stated.
  O no control group
  O group and control
  O other

- if other, provide details:
  [___]

- The experimental unit.
  O single animal
  O litter
  O cage
  O other

- if other, provide details:
  [___]

2 Sample size

- Specify the exact number of experimental units allocated to each experimental group (enter a space-separated list of numbers).
  [___]
  O not stated

- Specify the exact number of animals allocated to each experimental group (enter a space-separated list of numbers).
  [___]
  O not stated

- Animals used in total.
  [___]
  O not stated

- numeric statement kind
  O exact number
  O fuzzy number
  O not stated

Explain how the sample size is decided. Provide details of any a priori sample size calculation, if done.

- The sample size is determined by calculation.
  O yes
  O no
  O not stated

If yes, then provide the calculation parameters used:

- Power (in percent).
  [___]
  O not stated

- Significance level (in percent).
  [___]
  O not stated

- Effect size (in standard deviations).
  [___]
  O not stated

- Directionality.
  O one-sided
  O two-sided
  O not stated

3 Inclusion and exclusion criteria

- Describe the criteria which are used for including and excluding animals (or experimental units) during the experiment, and data points during the analysis. [___]
  O not stated

- Specify if these criteria are established a priori. If no criteria are set, state this explicitly.
  O a priori
  O a posteriori
  O no exclusion criteria used
  O not stated
  O other

- if other, provide details:
  [___]

4 Randomisation

- State whether randomisation is used to allocate experimental units to control and treatment groups.
  O done
  O stated as not done
  O not stated

- Provide the method used to generate the randomisation sequence.
  [___]
  O not stated

- Describe the strategy used to minimise potential confounders such as the order of treatments and measurements, or animal/cage location. If confounders are not controlled, state this explicitly.
  O strategy described
  O confounders not controlled
  O strategy not described

5 Blinding/Masking

- Who is aware of the group allocation at the different stages of the experiment (during the allocation, the conduct of the experiment, the outcome assessment and the data analysis)?
  O blinding done
  O blinding not done
  O not stated

6 Outcome measures

Clearly define all outcome measures assessed (eg, cell death, molecular markers or behavioural changes).

- Primary outcome(s).
  [___]
  O not stated

- Secondary outcome(s), if any.
  [___]
  O not stated

7 Statistical methods

Provide details of the statistical methods used.

- The statistical methods used are named.
  O yes
  O no

- If yes, which are used:
  O t-Test paired
  O t-Test unpaired
  O ANOVA one way
  O ANOVA two way
  O Kruskal Wallis
  O Mann Whitney U (Willcoxon)
  O $\chi 2$ (chi square)
  O log rank
  O other methods used

- if yes, provide details:
  [___]

- adjustment made for multiple comparison
  O yes
  O no
  O irrelevant
  O not stated

- Were requirements discussed for the used methods?
  O yes
  O no

- Were limitations discussed of the used method?
  O yes
  O no

Provide details about the software used.

- The used software is named.
  O yes
  O no

- If yes, which are used:
  O GraphPad PRISM
  O SPSS
  O SAS
  O R
  O Excel
  O nQuery
  O G-Power
  O GINGER
  O other software mentioned

- if yes, provide details:
  [___]

8 Experimental animals

Provide species-appropriate details of the animals used, including species, strain and substrain, sex, age or developmental stage and, if relevant, weight.

- Animal species.
  [___]
  O not stated

- Animal strain.
  [___]
  O not stated

- Sex.
  O female
  O male
  O whatever
  O not stated
  O other

- if other, provide details:
  [___]

- Minimum age.
  [___]
  O not stated

- Time unit for minimum age.
  O days
  O weeks
  O months
  O years

- Maximum age.
  [___]
  O not stated

- Time unit for maximum age.
  O days
  O weeks
  O months
  O years

ARRIVE Recommended Set

13 Objectives

Clearly describe the research question, research objectives and, where appropriate, specific hypotheses being tested.

- Primary reasearch question.
  [___]
  O not stated

- Type of study.
  O confirmatory
  O exploratory
  O setup
  O training
  O not identifiable
  O not stated
  O other

- if other, provide details:
  [___]

15 Housing and husbandry

Provide details of housing and husbandry conditions, including any environmental enrichment.

- Housing conditions are specified.
  O yes
  O no

16 Animal care and monitoring

Describe any interventions or steps taken in the experimental protocols to reduce pain, suffering and distress.

- Steps are taken to reduce animal suffering.
  O yes
  O no
  O not stated

Describe the humane end points established for the study. If the study does not have humane end points, state this.

- Humane endpoints are established.
  O yes
  O no
  O not stated

19 Protocol registration

- Provide a statement indicating whether a protocol (including the research question, key design features and analysis plan) is prepared before the study, and if and where this protocol is registered.
  O protocol registered
  O protocol not registered
  O no protocol
  O no statement provided

Beyond ARRIVE

22 Severity of animal suffering

- Categorize the suffering inflicted on animals.
  O non-recovery
  O severe
  O moderate
  O mild
  O not stated

23 Biostatistician

- Is a statistics institute involved?
  O yes
  O no
  O not stated

24 Classification

- Research field(s) of the experiment (space-separated list)
  [___]

Appendix C: Definition of Grouped Research Fields

Research_Institute	Research_Field
IN_Labormedizin	NON_CLINICAL
IN_Pathologie	NON_CLINICAL
SO_CCRI_St_Anna_Kinderkrebsforschung	RESEARCH_INSTITUTE
SO_CeMM	RESEARCH_INSTITUTE
SO_Ludwig_Boltzmann_Institute_for_Rare_and_Undiagnosed_Diseases	RESEARCH_INSTITUTE
SO_Max_Perutz_Labs	RESEARCH_INSTITUTE
SO_Vetmeduni_Wien	RESEARCH_INSTITUTE
UK_Allgemeinchirurgie	CLINICAL_SURGICAL
UK_Anaesthesie_Allgemeine_Intensivmedizin_und_Schmerztherapie	CLINICAL_NON_SURGICAL
UK_Anaesthesie_Allgemeine_Intensivmedizin_und_Schmerztherapie ZE_Biomedizinische_Forschung	CLINICAL_NON_SURGICAL
UK_Dermatologie	CLINICAL_SURGICAL
UK_Hals_Nasen_und_Ohrenkrankheiten	CLINICAL_SURGICAL
UK_Herzchirurgie	CLINICAL_SURGICAL
UK_Innere_Medizin_I	CLINCAL_INTERNALMED
UK_Innere_Medizin_I ZE_Physiologie_und_Pharmakologie	CLINCAL_INTERNALMED
UK_Innere_Medizin_II	CLINCAL_INTERNALMED
UK_Innere_Medizin_III	CLINCAL_INTERNALMED
UK_Kinder_und_Jugendheilkunde	CLINICAL_NON_SURGICAL
UK_Klinische_Pharmakologie	CLINICAL_NON_SURGICAL
UK_Mund_Kiefer_und_Gesichtschirurgie	CLINICAL_SURGICAL
UK_Neurologie	CLINICAL_NON_SURGICAL
UK_Notfallmedizin	CLINICAL_NON_SURGICAL
UK_Orthopaedie_und_Unfallchirurgie	CLINICAL_SURGICAL
UK_Plastische_Rekonstruktive_und_aesthetische_Chirurgie	CLINICAL_SURGICAL
UK_Radiologie_und_Nuklearmedizin	CLINICAL_NON_SURGICAL
UK_Radioonkologie	CLINICAL_NON_SURGICAL
UK_Thoraxchirurgie	CLINICAL_SURGICAL
UK_Universitaetszahnklinik	CLINICAL_NON_SURGICAL
ZE_Anatomie_und_Zellbiologie	NON_CLINICAL
ZE_Biomedizinische_Forschung	RESEARCH_INSTITUTE
ZE_Hirnforschung	RESEARCH_INSTITUTE
ZE_Krebsforschung	RESEARCH_INSTITUTE
ZE_Medizinische_Physik_und_Biomedizinische_Technik	NON_CLINICAL
ZE_Pathobiochemie_und_Genetik	NON_CLINICAL
ZE_Pathophysiologie_Infektiologie_Immunologie	NON_CLINICAL
ZE_Physiologie_und_Pharmakologie	NON_CLINICAL