EDA Report

The Experimental Design Assistant (https://eda.nc3rs.org.uk) is an online tool which guides researchers through the design and analysis of in vivo experiments. Information is provided by the researcher to build an EDA diagram – see Annex. Depending on the information inputted specific prompts are triggered by the EDA which provide tailored advice and feedback on the experimental plan.

This report summarises the information provided by the researcher and the feedback from the EDA.

Section 1: Summary

Title of EDA diagram	test2
Date report generated	23/07/2021

Section 2: Information provided by the researcher

1: Objectives

Null hypothesis	The airway staining effect of one liposome administration scheme was significantly better than that of other groups
Alternative hypothesis	No group of liposome administration regimen had significantly better airway staining effect than other groups
Effect of interest	effect of staining of airway tissue
Effect size	more than 50% airway has been stained
Justification for effect size	common-sense experience

2: Groups and sample size

Total number of animals in the experiment	63
Groups included in the primary analysis	3 groups:
• Group 11	role=test; n=7
• Group 12	role=test; n=7
• Group 13	role=control/comparator; n=7
Justification for sample size	use EDA power calculation

3: Randomisation and blinding

Experimental unit	animal

There are three steps in this experiment where experimental units are allocated to groups:

• Allocation 1

Randomisation strategy	randomisation within blocks
Randomisation procedure	EDA spreadsheet
Allocation concealment	treatments coded for individual animals

• Allocation 2

Randomisation strategy	randomisation within blocks
Randomisation procedure	EDA spreadsheet
Allocation concealment	treatments coded for individual animals

• Allocation 3

Randomisation strategy	randomisation within blocks
Randomisation procedure	EDA spreadsheet
Allocation concealment	treatments coded for individual animals

There is one step in this experiment where measurements are taken:

• Measurement: staining of airway tissue

Blinding during result assessment	animals individually coded

There is one analysis in this experiment:

• Airway staining range of different liposome administration schemes

Blinding during analysis of the data	groups coded

4: Analysis

Details of the primary analysis (Airway staining range of different liposome administration schemes)

Statistical analysis method	unpaired t-test
Factor of interest	Independent variable of interest 1?Different liposome types, categorical, with 7 levels (Dye containing DOTAMA/DOPE, Dye containing DOTAP/Chol, Dye containing DOTAP/DOPE, Dye containing DOTMA/Chol, Dye containing LID, Dye containing lipo2000, vehicle)
Factor of interest	Independent variable of interest 3?Administration Concentration, categorical, with 3 levels (10mg/kg, 20mg/kg, 5mg/kg), repeated factor
Factor of interest	Independent variable of interest 2?Different administration times, categorical, with 3 levels (10 times in ten days, 3 times in ten days, 7 times in ten days), repeated factor
Blocking factor	Nuisance variable 1?Individual respiratory difference, categorical, with 1 level (1 day)
Covariate	NONE

Outcome measures

Outcome measures in the primary analysis	Staining range of airway tissue, treated as continuous
Other outcome measures	NONE

5: Characteristics of animals in this experiment

Animal?BALB/c mouse

Species	mouse
Strain	INFORMATION NOT PROVIDED
Sex	female
Age	mean=7, range=6-8, unit=week
Weight	INFORMATION NOT PROVIDED

Section 3: Summary of the feedback provided by the EDA

Critique (Table 6) and advice (Table 7) from the EDA is dependent on the quality, including accuracy and completeness, of the information inputted by the researcher. Where the researcher has not addressed issues detected by the EDA, it is important to consider whether this undermines the design of the study.

6: Critique

Total number of issues	0
Issues related to the diagram structure, which might compromise the accuracy of this report	0
Issues related to internal consistency	0
Issues related to missing information	0
Issues suggesting improvements to the design	0

7: Advice for the primary analysis

Suggestion for a method of analysis appropriate for the design	Complex design - more than one repeated factor