Reviewer’s report

Title: Antidepressant-like effects of the aqueous macerate of the bulb of Gladiolus dalenii Van Geel (Iridaceae) in a rat model of epilepsy-associated depression.

Version: 1 Date: 12 May 2013

Reviewer: Jacqueline Dimatelis

Reviewer’s report:

The manuscript by Ngoupaye et al. investigated the possible anti-depressant effects of the Gladiolus delenii Van Geel (Iridacaea) in an animal model of epilepsy of which depression is a common comorbidity. The first aim was to establish an epilepsy model which showed depressive-like behaviour as measured by increased immobility in the forced swim test. After establishing that the epilepsy-induced animals do show depressive-like behaviour, the anti-depressant properties of the Gladiolus bulb was tested and compared to a known antidepressant, fluoxetine.

Minor issues not for publication:
Abstract, line 4: “Owning this background…” change to “Owning to this background…”
Abstract – Method, line 7: “Mann Whitney test” change to Mann Whitney U test
Introduction, line 13: “Furthermore, in general commonly used…” change to “Commonly used…”
Suggest to also omit the use of inverted comma’s and rewrite in own wording.
Methods – Animals, line 4: “24 males Wistar rats” change to “24 male Wistar rats”
Methods, Induction of TLE, line 6-7: Immediate behavioural observation was continued for at least another…” omit “another”
Results, Reduction of depression-like behaviour in the forced swim test, line 4: replace “[ ]” with “( )”
Discussion, second paragraph, line 5: Begin sentence with a capital “Increased”. Would also change wording to “and is claimed to represent human depression” rather than reproduce.
Discussion, third paragraph, line 1-2: “…was significantly reduced when they were treated…” change to “…was significantly reduced when treated…”
Discussion, paragraph 7, line 2: “Studies by [31] showed…” should include an author’s name.
Abbreviations: SE, status epilepticus was never used.

Discretionary revisions:
Introduction: Background on the use of fluoxetine as an antidepressant should be
introduced as well as other findings that have made use of the epilepsy-induced
animal model.

Minor essential revisions:
Abstract - Method, line 4: “The levels of the following known…” should be
reworded as adrenal weights cannot be expressed as levels and the wording of
known neurochemical parameters changed. Suggested change – “The following
depression-related parameters were determined.....”
Abstract – Results: As the epilepsy-induced animal model is a model already in
use, the first sentence of the result section is too strong, would omit and rather
state findings of the study.
Abstract – Results, line 4: First mention of fluoxetine and should be introduced
earlier.
Abstract – Results: The results for the open field are not included and should be.
Abstract – Conclusions: The statement that the anti-depressant effects of
Gladiolus are superior to those of fluoxetine is unfounded and should be
rephrased as the findings pertaining to fluoxetine could be dose-dependent. This
should also be changed in the conclusion following the discussion.
Introduction, line 23: “Indeed the number of people seeking alternative
therapies....” statement should be referenced.
Introduction, paragraph describing the uses of Gladiolus plant states that it is
used both as a laxative and also treats diarrhoea which seems ambiguous.
Would omit the last sentence of that paragraph relating to the anti-fungal activity
of Gladiolus.
Methods, Plant Collection, line 4: Change “crashed” to “crushed”
Methods, Plant Collection, line 8: An aqueous solution of the extract was
prepared 1h before administration. Authors should comment on the stability of
their extract.
Methods, Forced swim test, line 1: “The forced swim test is a well characterized
model used to study the depressive state in rodents”. Would change wording to
reflect that the forced swim test is used to screen the effectiveness of
anti-depressant drugs.
Methods, Forced swim test: Authors should include whether immobility was
scored by a blind experienced observer of whether a tracking system was used.
Methods, Determination of BDNF: Authors should state whether hippocampi
collected were weighed and whether these weights were used in their calculation
of BDNF as the graphs express the concentration of BDNF in pg/ml and should
be expressed in mg of protein if the weights were accounted for.
Methods, Statistical analysis: Should explain the use on non-parametric Mann
Whitney U test and parametric ANOVA. Author should state whether the data
was tested for normality.
Results, Reduction of depression-like behaviour in the forced swim test, line 2: “These high immobility times...” would omit “high” as these immobility times are really low in comparison with other publications using this model (Pineda et al., 2011).

Results, Assessment of the HPA axis activity, line 2: Remove “(0.803pg/ml)” and “(1.039pg/ml)” it confuses the reader as being dosages. Same for the next paragraph.

Figure legends: The n=5 rats per group is incorrectly stated and should reflect the ‘n’ reflected in the F-statistic employed.

Figure legends, Fig 2 +5: The “###” incorrectly state that this group is different from the fluoxetine treated group and should read that it is different from the Gladiolus treated group.

Table Caption + Footnote, Table 1: states mice were used and should be corrected to rats.

Figure 4: Adrenal weights should be expressed as a percentage of body weight.

Major compulsory revisions:

Methods, Animals: Authors should include total number of animals with which the experiment was started in order to select the 24 males that were commenced with that showed more than two recurring seizures.

Methods, Drugs and treatment: References should be given for the dosages used for each respective drug administered. Also, how the treatments were administered by oral route.

Methods, Induction of TLE, line 4: Specify criteria by which seizures were counted for example was the rat required to fall over etc? Especially since, the seizure activity was viewed in fast forward mode that it would be essential to establish seizure activity.

Results, Reduction in depression-like behaviour in the forced swim test, line 4: “...when compared to saline-treated controls...” uncertain as to the control aspect as the legend for figure 2 stated that these were TLE animals treated with saline. If the latter is true, then there is no naive treated animals to compare immobility times of the TLE treated animals to and one can therefore not gauge the extent of anti-depressant action of the drugs administered and should be listed as a limitation.

Discussion, paragraph 4: The interpretation of decreased locomotor activity of animals treated with Gladiolus in the open field supporting their findings in the forced swim test should include an alternative interpretation. The decrease in exploratory activity in the open field could be reflective of anxious behaviour, especially if you consider the rats were placed in the centre of the field one would expect the animals to spent more time there. Considering that these animals were possibly anxious and hence spent more time swimming in the forced swim test should be discussed as a limitation to their interpretation of antidepressant action of the Gladiolus treatment.
Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests