

CLAIMS

1. A method for assessing pain caused by administration of a drug solution, the method comprising:

measuring a myoelectric response caused by punctuation
5 of an injection needle (18) into an administration site of a plantar subcutaneous of an anesthetized mammalian experimental animal; and

measuring a myoelectric response caused by the administration of the drug solution to the plantar
10 subcutaneous through the injection needle (18) after a lapse of one second or more since the myoelectric response caused by the punctuation has disappeared, thereby enabling the myoelectric response caused by the administration of the drug solution to be measured separately from the
15 myoelectric response caused by the punctuation;

wherein the myoelectric response is measured by using a measurement electrode (24) inserted to a semitendinosus muscle of the anesthetized animal; and

wherein the step of measuring the myoelectric response
20 caused by the administration of the drug solution is performed by performing at least one of measurement of a duration time of the myoelectric response caused by the administration of the drug solution and measurement of an EMG intensity obtained by integrating absolute values of
25 myoelectric potentials during a period from occurrence of

the myoelectric response by the administration of the drug solution to disappearance of the myoelectric response.

2. The method for assessing pain caused by administration of a drug solution according to claim 1,

5 wherein, to a plurality of administration sites of the planar subcutaneous, a plurality of the drug solutions having different compositions is administered under an identical administration condition or the drug solution having an identical composition is administered under
10 different administration conditions.

3. The method for assessing pain caused by administration of a drug solution according to claim 1,

 wherein the experimental animal is a rat (12).

4. The method for assessing pain caused by administration
15 of a drug solution according to claim 3,

 wherein a dose per site at the plurality of administration sites is a range of 10 to 100 μ L.

5. The method for assessing pain caused by administration of a drug solution according to claim 4, wherein

20 an interval between the administration sites, adjacent to each other, is set to be 2 mm or more.

6. The method for assessing pain caused by administration of a drug solution according to any one of claims 3 to 5, wherein

25 a total dose at the plurality of administration sites

is 200 μ L or less.

7. The method for assessing pain caused by administration of a drug solution according to any one of claims 3 to 6, wherein

5 an administration rate of the drug solution is a range of 5 to 100 μ L/sec.

8. The method for assessing pain caused by administration of a drug solution according to any one of claims 1 to 7, wherein

10 a bipolar electrode is used as the measurement electrode (24), and

a reference electrode (26) is pasted to a thoracic skin surface (12c) of the anesthetized animal.

9. A method for selecting drug solution administration,
15 the method comprising:

a measurement step of a myoelectric response caused by punctuation of an injection needle (18) into an administration site of a plantar subcutaneous of an anesthetized mammalian experimental animal; and

20 a measurement step of a myoelectric response caused by administration of a drug solution to the plantar subcutaneous through the injection needle (18) after a lapse of one second or more since the myoelectric response caused by the punctuation has disappeared, thereby enabling
25 the myoelectric response caused by the administration of

the drug solution to be measured separately from the myoelectric response caused by the punctuation;

wherein the myoelectric response is measured by using a measurement electrode (24) inserted to a semitendinosus

5 muscle of the anesthetized animal;

wherein the measurement step of the myoelectric response caused by the administration of the drug solution is performed by performing at least one of measurement of an EMG intensity obtained by integrating absolute values of
10 the myoelectric potential from occurrence to disappearance of the myoelectric response caused by the administration of the drug solution and measurement of a duration time of the myoelectric response caused by the administration of the drug solution;

15 wherein the measurement steps are performed for each of a plurality of drug solutions having different compositions or for each of a plurality of administration conditions; and

the method further comprising a identifying step of
20 identifying a drug solution composition with which the duration time is shortest or the EMG intensity is smallest, among the plurality of drug solutions having different compositions, or identifying an administration condition with which the duration time is shortest or the EMG
25 intensity is smallest, among the plurality of

administration conditions.