Claims

1. A method for examining a liquid sample (20) which has a liquid (1) and at least one cell (3) located in the liquid (1) and/or at least one particle located in the liquid (1), wherein at least one data element that contains information on a sample region (2) is determined with the method, characterised in that the data element is supplied to a trained algorithm that generates a result dependent on the data element, and in that a dispensing process comprising the discharging of at least a part of the liquid sample (20) depends on the result, wherein the result is a prediction of a cell property and/or a particle property or an estimated value for a cell property and/or a particle property.

2. The method according to claim 1, characterised in that it is checked whether a predetermined number of cells (3) and/or particles are arranged in the sample region (2).

3. The method according to claim 2, characterised in that
   a. the data element is supplied to the trained algorithm when the predetermined number of cells (3) and/or particles is arranged in the sample region (2) and/or in that
   b. the data element is not supplied to the trained algorithm if the predetermined number of cells (3) and/or particles is not arranged in the sample region (2).

4. The method according to claim 2 or 3, characterised in that
   a. the number of cells and/or particles arranged in the sample region is determined by the trained algorithm or another trained algorithm, or in that
   b. the number of cells and/or particles arranged in the sample region is determined by the trained algorithm or another trained algorithm and it is checked whether the predetermined number of cells (3) and/or particles is arranged in the sample region or in that
   c. the number of cells and/or particles arranged in the sample region is determined by an algorithm that cannot be trained and it is checked whether the predetermined number of cells (3) and/or particles is arranged in the sample region.

5. The method according to any one of claims 1 to 4, characterised in that the data element is a measurement signal or an image signal.

6. The method according to any one of claims 1 to 5, characterised in that only a part of the data element is supplied to the trained algorithm.

7. The method according to claim 5 or 6, characterised in that an image is generated from the image signal.

8. The method according to claim 7, characterised in that

a. the position of the cell (3) and/or of the particle in the image is determined or in that

b. an image section is determined that has the cell (3) and/or the particle and in that only that part of the image signal containing the image section is supplied to the trained algorithm.

9. The method according to claim 7 or 8, characterised in that the image shows a dispenser (7) receiving the sample region (2) or a part of the dispenser (7) receiving the sample region (2).

10. The method according to any one of claims 1 to 9, characterised in that the dispensing process comprises determining a storage location for the liquid sample (20) to be dispensed.

11. The method according to any one of claims 1 to 10, characterised in that the fluid discharge is carried out according to a drop-on-demand mode of operation.

12. The method according to any one of claims 1 to 11, characterised in that the trained algorithm is part of an artificial neural network and/or contains at least one artificial neural network.

13. The method according to any one of claims 1 to 12, characterised in that the result depends on a classification of the data element into one of at least two classes.

14. The method according to any one of claims 1 to 13, characterised in that the algorithm is trained before the data element is supplied to the algorithm.

15. The method according to claim 14, characterised in that a class is assigned to at least one training data element.

16. The method according to claim 15, characterised in that the class assignment of the training data element depends on measurement data based on a liquid sample that is dispensed.

17. The method according to any one of claims 14 to 16, characterised in that the algorithm is trained by means of machine learning.

18. The method according to any one of claims 14 to 17, characterised in that a plurality of first training data elements is determined and a plurality of second training data elements is determined.

19. The method according to claim 18, characterised in that at least one second training data element is assigned to each first training data element.

20. The method according to claim 18 or 19, characterised in that at least two classes are formed depending on the second training data elements.

21. The method according to any one of claims 18 to 20, characterised in that the classes and/or the first training data elements and/or the second training data elements are transmitted to the algorithm.

22. The method according to any one of claims 1 to 21, characterised in that the trained algorithm is retrained.

23. The method according to any one of claims 1 to 22, characterised in that the data element contains information on a cell property of the cell arranged in the sample region and/or information on a particle property of the particle arranged in the sample region.

24. A dispensing apparatus (6) comprising means for carrying out the method according to any one of claims 1 to 23.

25. The dispensing apparatus according to claim 24, characterised by

a. a dispenser (7) for discharging a liquid sample (20) or by

b. a dispenser (7) for discharging a liquid sample (20), wherein the sample region (2) is arranged in the dispenser (7) and/or can be discharged by the dispenser (7).

26. The dispensing apparatus (6) according to claim 24 or 25, characterised by an optical detection device (8) for generating an image of the sample region (2).

27. The dispensing apparatus (6) according to any one of claims 24 to 26, characterised by an evaluation device (9) for evaluating whether a predetermined number of cells (3) and/or particles are arranged in the sample region (2).

28. The dispensing apparatus (6) according to any one of claims 24 to 27, characterised by a classifier (13) for classifying the data elements into a class.

29. The dispensing apparatus (6) according to claim 28, characterised in that the classifier (13) is part of an artificial neural network and/or contains at least one artificial neural network.

30. The dispensing apparatus (6) according to any one of claims 24 to 29, characterised by a displacement device (10) by means of which the dispenser (7) and/or a container (4) for receiving the liquid sample (20) and/or a reject container (5) can be displaced for receiving the liquid sample (20), wherein a displacement process depends on the result.

31. The dispensing apparatus (6) according to any one of claims 24 to 30, characterised by a deflection device for deflecting the discharged liquid sample (20) and/or a suction device for suctioning off the discharged liquid sample (20), wherein a deflection process and/or suction process depends on the result.

32. A computer program comprising instructions that, when the program is executed by a computer (12), cause the computer to carry out the method according to any one of claims 1 to 23.

33. A data carrier on which the computer program according to claim 32 is stored.

34. A data carrier signal that transmits the computer program according to claim 32.