Claims

1. A system (110) for detection of at least one analyte in a body fluid, in particular for detection of blood glucose, wherein the system (110) is designed to generate a sample (130) of the body fluid and to transfer at least some of the sample to at least one test element (128), in particular a test panel (129), wherein the system (110) is designed such that a time period between the generation of the sample (130) and the application to the test element (128) is less than 1 s, preferably less than 500 ms.

2. The system (110) as claimed in the preceding claim, wherein the system (110) is designed to transfer the sample (130) to the test element (128) by means of one or more of the following mechanisms:
   - by means of at least one capillary (132);
   - by means of at least one lancet (120) designed at least partially as a capillary (132), in particular as a partially opened capillary (132), in particular a lancet (120) with integrated test element (128);
   - by means of at least one mechanism in which the sample (130) is first generated on a skin part and is then transferred to the test element (128) by a movement of the test element (128) relative to the skin part and/or to the sample (130).

3. The system (110) as claimed in one of the preceding claims, comprising at least one lancet (120) for puncturing a skin part, wherein the sample (130) is transferred via at least one capillary (132), in particular at least one capillary (132) wholly or partially integrated in the lancet (120), wherein the test element (128), in particular the test panel (129), is wholly or partially integrated in the lancet (120).

4. The system (110) as claimed in one of the preceding claims, wherein at least one capillary (132) is provided for the transfer of the sample (130), wherein the capillary (132) has at least one hydrophilization, in particular at least one hydrophilic coating.

5. The system (110) for detection of at least one analyte in a body fluid, in particular as claimed in one of the preceding claims, wherein the system (110) is designed to generate a sample (130) of the body fluid and to transfer at least some of the sample to at least one test element (128), in

particular a test panel (129), wherein at least one capillary (132) is provided for the transfer of the sample (130), wherein the capillary (132) has a ratio of fillable capillary length to capillary diameter of less than 100.

6. The system (110) for detection of at least one analyte in a body fluid, in particular as claimed in one of the preceding claims, wherein the system (110) is designed to generate a sample (130) of the body fluid and to transfer the sample to at least one test element (128), in particular one test panel (129), wherein the system (110) is designed such that a sample volume of the sample (130) is greater than 10 nl, wherein the sample volume is less than 500 nl.

7. The system (110) as claimed in the preceding claim, wherein the sample volume is less than 300 nl, in particular less than 200 nl, and particularly preferably less than 100 nl.

8. The system (110) as claimed in one of the two preceding claims, wherein the system (110) is designed to transfer the sample (130) to the test element (128) by means of one or more of the following mechanisms:
   - by means of at least one capillary (132);
   - by means of at least one lancet (120) designed at least partially as a capillary (132), in particular as a partially opened capillary (132), in particular a lancet (120) with integrated test element (128);
   - by means of a mechanism in which the sample (130) is first generated on a skin part and is then transferred to the test element (128) by a movement of the test element (128) relative to the skin part and/or relative to the sample (130).

9. The system (110) as claimed in one of the preceding claims, wherein the system (110) is designed to detect an actual sample volume of the sample (130) picked up by the system (110) and/or of the sample (130) transferred to the test element (128).

10. The system (110) as claimed in the preceding claim, wherein the system (110) is further designed to detect the analyte taking into account the actual sample volume, and wherein evaporation effects, dependent on sample volume, and resulting changes in concentration are at least partially compensated.

11. The system (110) for detection of at least one analyte in a body fluid, in particular as claimed in one of the preceding claims, wherein the system (110) is designed to generate a sample (130) of the body fluid and to transfer the sample to at least one test element (128), in particular a test panel (129), wherein the system (110) is designed to detect moisture during the generation of the sample (130) and/or during the transfer of the sample (130) to the test element (128), wherein the system (110) is further designed to detect the analyte by taking into account the humidity, wherein the system (110) has at least one opening (116), preferably a closable opening (116), wherein a skin part, in particular a skin part of a finger, can be placed wholly or partially in the opening (116), wherein the skin part at least partially closes the opening (116), and wherein the sample (130) is generated in the skin part placed in the opening (116).

12. The system (110) as claimed in the preceding claim, wherein the system (110) is designed to effect the generation of the sample (130) and the transfer to the test element (128) within a substantially closed housing (112), wherein the system (110) is designed to detect the humidity within the housing (112).

13. The system (110) as claimed in one of the two preceding claims, wherein the system (110) is designed also to take a volume of the sample (130) into account in the detection of the analyte.

14. The system (110) as claimed in one of the three preceding claims, wherein the system (110) is further designed to at least temporarily interrupt the detection of the analyte and/or generate a warning when a predefined minimum humidity is undershot.

15. The system (110) for detection of at least one analyte in a body fluid **as claimed in one of the preceding claims**, wherein the system (110) is designed to generate a sample (130) of the body fluid and to transfer the sample to at least one test element (128), in particular a test panel (129), wherein the system (110) is designed to detect moisture during the generation of the sample (130) and/or during the transfer of the sample (130) to the test element (128), wherein the system (110) is further designed to detect the analyte by taking into account the humidity, wherein

the system (110) has at least one opening (116), preferably a closable opening (116), wherein a skin part, in particular a skin part of a finger, can be placed wholly or partially in the opening (116), wherein the skin part at least partially closes the opening (116), and wherein the sample (130) is generated in the skin part placed in the opening (116), wherein the system (110) is further designed to detect at least one further parameter, in particular within the housing (112), during the generation of the sample (130) and/or during the transfer of the sample (130) to the test element (128), and preferably to take the at least one further parameter into account in the detection of the analyte in the sample (130).

Claims

1. A system for detection of at least one analyte in a body fluid, such as, for example, the detection of blood glucose, wherein the system is designed to generate a sample of the body fluid and to transfer at least some of the sample to at least one test element, in particular a test panel, by means of at least one lancet including an at least partially open capillary in the form of an open slit in the lancet, wherein the system is designed such that the sample volume is less than 1 µL, and a time period between the generation of the sample and the application to the test element is less than 1 s, preferably less than 500 ms..

2. The system as claimed in claim 1, wherein the test element, in particular the test panel, is wholly or partially integrated in the lancet.

3. The system as claimed in any one of the preceding claims, wherein the system is designed to transfer the sample to the test element by means of at least one mechanism in which the sample is first generated on a skin part and is then transferred to the test element by a movement of the test element relative to the skinpart and/or to the sample.

4. The system as claimed in any one of the preceding claims, wherein the lancet is for puncturing a skin part.

5. The system as claimed in any one of the preceding claims, wherein the capillary includes at least one hydrophilization for the transfer of the sample, wherein the capillary has at least one hydrophilization, in particular at least one hydrophilic coating..

6. The system as claimed in claim 1, wherein the capillary has a ratio of fillable capillary length to capillary diameter of less than 100.

7. The system as claimed in claim 1, wherein the system is designed such that a sample volume of the sample is greater than 10 nl, and less than 500 nl.

8. The system as claimed in claim 7, wherein the sample volume is less than 300 nl, in particular less than 200 nl, and particularly preferably less than 100 nl..

9. The system as claimed in one of the preceding claims, wherein the system is designed to detect an actual sample volume of the sample picked up by the system and/or of the sample transferred to the test element.

10. The system as claimed in the preceding claim, wherein the system is further designed to detect the analyte taking into account the actual sample volume, and wherein evaporation effects, dependent on sample volume, and resulting changes in concentration are at least partially compensated.

11. The system as claimed in claim 1, wherein the system is designed to detect humidity during the generation of the sample and/or during the transfer of the sample to the test element, in particular one test panel, wherein the system is further designed to detect the analyte taking into account the humidity, wherein the system has at least one opening, preferably a closable opening, wherein a skin part, in particular a skin part of a finger, can be placed wholly or partially in the opening, wherein the skin part at least partially closes the opening, and wherein the sample is generated in the skin part placed in the opening.

12. The system as claimed in claim 11, wherein the system is designed to effect the generation of the sample and the transfer to the test element within a substantially closed housing, wherein the system is designed to detect the humidity within the housing.

13. The system as claimed in claim 11 or 12, wherein the system is designed also to take a volume of the sample into account in the detection of the analyte.

14. The system as claimed in any one of claims 11 to 13, wherein the system is further designed to at least temporarily interrupt the detection of the analyte and/or generate a warning when a predefined minimum humidity is undershot.

15. The system as claimed according to any one of the preceding claims, wherein the system is further designed to detect at least one further parameter, , in particular within the housing, during the generation of the sample and/or during the transfer of the sample to the test element, and

preferably to take the at least one further parameter into account in the detection of the analyte in the sample.