CLAIMS

1. A strip-shaped detector detecting an analyte in a liquid sample, the detector comprising:

a collecting member directly collecting the liquid sample from a living organism;

a holding member including a labeling reagent binding specifically to the analyte, the labeling reagent being held in a state where the labeling reagent can move along with the movement of the liquid sample;

a detecting member including a detection reagent capturing a complex of the analyte and the labeling reagent by binding specifically to the analyte, and the detection reagent being immobilized;

an absorbing member being capable of absoring the liquid sample; and

a liquid-impermeable supporting member; and

a second adhesive member adhering to the detecting member, the absorbing member and the supporting member,

wherein the collecting member, the holding member, the detecting member, and the absorbing member are arranged on the supporting member in the longitudinal direction of the detector so that the liquid sample moves through the inside of these members in the above order of the members by capillarity, and

the collecting member includes a protruding portion sticking out of the supporting member at the upstream side in the movement direction of the liquid sample,

a second adhesive member adheres to the end portion of the

downstream side of the detecting member, the absorbing member, and the end portion of the downstream side of the supporting member while covering these members,

the second adhesive member includes a non-adhesive face at the opposite side from the adhesive face adhering to the respective members, and

a portion for pick up is formed at the end portion of the downstream side in the second adhesive member, in a manner in which the second adhesive members adhere to each other in a portion where the second adhesive member is folded back.

2. The detector according to Claim 1,

wherein the holding member includes a portion overlapped with a portion of the detecting member, and the length along the longitudinal direction of the overlapped portion is equal to or longer than the length along the longitudinal direction of a portion holding the labeling reagent in the holding member.

3. The detector according to Claim 1,

wherein the collecting member and the holding member share a single fibrous substrate, and

the labeling reagent is held in the end portion of the downstream side in the movement direction of the fibrous substrate so as to form the holding member.

4. The detector according to Claim 2 or 3,

wherein the length along the longitudinal direction of the overlapped portion is longer than the length along the longitudinal direction of the portion holding the labeling reagent in the holding member.

5. The detector according to Claim 1 or 2,
wherein the collecting member is an unwoven fabric including pulp.

6. The detector according to Claim 3 or 4,
wherein the fibrous substrate is the unwoven fabric including pulp.

7. The detector according to Claim 5 or 6,
wherein the pulp is wood pulp.

8. The detector according to any one of Claims 5 to 7,
wherein the unwoven fabric is mixed with rayon.

9. The detector according to any one of Claims 5 to 8,
wherein the unwoven fabric is mixed with synthetic fiber.

10. The detector according to any one of Claims 5 to 9,
wherein the unwoven fabric is a compressed unwoven fabric.

11. The detector according to Claim 10,
wherein the density of the unwoven fabric is 40 mg/cm^3 or more.

12. The detector according to Claim 10 or 11,
wherein the thickness of the unwoven fabric is 0.8 mm or less.

13. The detector according to any one of Claims 10 to 12,
wherein the unwoven fabric is compressed at a compression rate of 10% or higher.

14. The detector according to any one of Claims 10 to 13,
wherein the density of the unwoven fabric is 45 mg/cm^3 or more.

15. The detector according to any one of Claims 10 to 14,
wherein the thickness of the unwoven fabric is 0.75 mm or less.

16. The detector according to any one of Claims 10 to 15,
wherein the unwoven fabric is compressed at a compression rate of 20% or higher.

17. The detector according to any one of Claims 1 to 16,
wherein the maximum width of the collecting member, the holding member, and the detecting member in a direction orthogonal to the longitudinal direction is 0.8 mm to 3 mm.

18. The detector according to any one of Claims 1 to 17,
wherein the detecting member further includes a control reagent binding specifically to the labeling reagent, and the control reagent is immobilized to the downstream side from the detection reagent.

19. The detector according to any one of Claims 1 to 18,
wherein the length of the protruding portion is 5 mm or more.

20. The detector according to any one of Claims 1 to 19, further comprising a first adhesive member adhering to the surfaces of: the end portion of the downstream side of the collecting member; the holding member; and the end portion of the upstream side of the detecting member, the surfaces being at the opposite side of these members from the supporting member,
wherein the first adhesive member includes a non-adhesive face at the opposite side from the adhesive face adhering to the surface.

21. The detector according to any one of Claims 1 to 20,
wherein the supporting member includes a first supporter also serving as a lining of the detecting member, and a second supporter provided on the opposite side of the first supporter from the detecting member.

22. The detector according to Claim 21,
wherein the second supporter is separated in the longitudinal direction in a portion where the second supporter is overlapped with the first supporter.

23. The detector according to any one of Claims 1 to 22,
wherein the supporting member has a function of highlighting the

color development upon capture caused by the labeling reagent.

24. The detector according to any one of Claims 1 to 22, further comprising a background member having a function of highlighting the color development upon capture caused by the labeling reagent, the background member being provided on the opposite side of the supporting member from the detecting member.

25. The detector according to Claim 24,

wherein the background member is a paper tape having an adhesive face on the opposite side of the supporting member from the detecting member, and

the supporting member extends 2 mm or more toward the upstream side from the background member.

26. The detector according to any one of Claims 1 to 25, having a mass of 0.8 g or less.

27. The detector according to any one of Claims 1 to 26,

wherein the living organism is a human being, and the liquid sample is tears.

28. The detector according to any one of Claims 1 to 27,

wherein the analyte is an IgE antibody, the labeling reagent is an labeled antibody recognizing the IgE antibody as an antigen with a labeling substance, the detection reagent is an antibody recognizing the

IgE antibody as an antigen and including a recognition site different from that of the antibody included in the labeling reagent, and the control reagent is an antibody recognizing the antibody included in the labeling reagent as an antigen.

29. A detection method of detecting an analyte in a liquid sample by using the detector according to any one of Claims 1 to 28.

CLAIMS

1. A strip-shaped detector detecting an analyte in a liquid sample, the detector comprising:

a collecting member directly collecting the liquid sample from a living organism;

a holding member including a labeling reagent binding specifically to the analyte, the labeling reagent being held in a state where the labeling reagent can move along with the movement of the liquid sample;

a detecting member including a detection reagent capturing a complex of the analyte and the labeling reagent by binding specifically to the analyte, and the detection reagent being immobilized;

an absorbing member being capable of absorbing the liquid sample; and a liquid-impermeable supporting member; and

a second adhesive member adhering to the detecting member, the absorbing member and the supporting member,

wherein the collecting member, the holding member, the detecting member, and the absorbing member are arranged on the supporting member in the longitudinal direction of the detector so that the liquid sample moves through the inside of these members in the above order of the members by capillarity, and

the collecting member includes a protruding portion sticking out of the supporting member at the upstream side in the movement direction of the liquid sample,

a second adhesive member adheres to the end portion of the downstream side of the detecting member, the absorbing member, and the end portion of the downstream side of the supporting member while covering these members,

the second adhesive member includes a non-adhesive face at the opposite side from the adhesive face adhering to the respective members, and

a portion for pick up is formed at the end portion of the downstream side in the second adhesive member, in a manner in which the second adhesive members adhere to each other in a portion where the second adhesive member is folded back.

2. The detector according to Claim 1, wherein the holding member includes a portion overlapped with a portion of the detecting member, and the length along the longitudinal direction of the overlapped portion is equal to or longer than the length along

the longitudinal direction of a portion holding the labeling reagent in the holding member.

3. The detector according to Claim 1, wherein the collecting member and the holding member share a single fibrous substrate, and the labeling reagent is held in the end portion of the downstream side in the movement direction of the fibrous substrate so as to form the holding member.

4. The detector according to Claim 2 or 3, wherein the length along the longitudinal direction of the overlapped portion is longer than the length along the longitudinal direction of the portion holding the labeling reagent in the holding member.

5. The detector according to Claim 1 or 2, wherein the collecting member is an unwoven fabric including pulp.

6. The detector according to Claim 3 or 4, wherein the fibrous substrate is the unwoven fabric including pulp.

7. The detector according to Claim 5 or 6, wherein the pulp is wood pulp.

8. The detector according to anyone of Claims 5 to 7, wherein the unwoven fabric is mixed with rayon.

9. The detector according to anyone of Claims 5 to 8, wherein the unwoven fabric is mixed with synthetic fiber.

10. The detector according to anyone of Claims 5 to 9, wherein the unwoven fabric is a compressed unwoven fabric.

11. The detector according to Claim 10, wherein the density of the unwoven fabric is $40mg/cm^3$ or more.

12. The detector according to Claim 10 or 11, wherein the thickness of the unwoven fabric is 0.8mm or less.

13. The detector according to anyone of Claims 10 to 12, wherein the unwoven fabric is compressed at a compression rate of 10% or higher.

14. The detector according to anyone of Claims 10 to 13, wherein the density of the unwoven fabric is 45mg/cm^3 or more.

15. The detector according to anyone of Claims 10 to 14, wherein the thickness of the unwoven fabric is 0.75mm or less.

16. The detector according to anyone of Claims 10 to 15, wherein the unwoven fabric is compressed at a compression rate of 20% or higher.

17. The detector according to anyone of Claims 1 to 16, wherein the maximum width of the collecting member, the holding member, and the detecting member in a direction orthogonal to the longitudinal direction is 0.8mm to 3mm.

18. The detector according to anyone of Claims 1 to 17, wherein the detecting member further includes a control reagent binding specifically to the labeling reagent, and the control reagent is immobilized to the downstream side from the detection reagent.

19. The detector according to anyone of Claims 1 to 18, wherein the length of the protruding portion is 5mm or more.

20. The detector according to anyone of Claims 1 to 19, further comprising a first adhesive member adhering to the surfaces of: the end portion of the downstream side of the collecting member; the holding member; and the end portion of the upstream side of the detecting member, the surfaces being at the opposite side of these members from the supporting member, wherein the first adhesive member includes a non-adhesive face at the opposite side from the adhesive face adhering to the surface.

21. The detector according to anyone of Claims 1 to 20, wherein the supporting member includes a first supporter also serving as a lining of the detecting member, and a second supporter provided on the opposite side of the first supporter from the detecting member.

22. The detector according to Claim 21, wherein the second supporter is separated in

the longitudinal direction in a portion where the second supporter is overlapped with the first supporter.

23. The detector according to anyone of Claims 1 to 22, wherein the supporting member has a function of highlighting the color development upon capture caused by the labeling reagent.

24. The detector according to anyone of Claims 1 to 22, further comprising a background member having a function of highlighting the color development upon capture caused by the labeling reagent, the background member being provided on the opposite side of the supporting member from the detecting member.

25. The detector according to Claim 24, wherein the background member is a paper tape having an adhesive face on the opposite side of the supporting member from the detecting member, and the supporting member extends 2mm or more toward the upstream side from the background member.

26. The detector according to anyone of Claims 1 to 25, having a mass of 0.8g or less.

27. The detector according to anyone of Claims 1 to 26, wherein the living organism is a human being, and the liquid sample is tears.

28. The detector according to anyone of Claims 1 to 27, wherein the analyte is an IgE antibody, the labeling reagent is an labeled antibody recognizing the IgE antibody as an antigen with a labeling substance, the detection reagent is an antibody recognizing the IgE antibody as an antigen and including a recognition site different from that of the antibody included in the labeling reagent, and the control reagent is an antibody recognizing the antibody included in the labeling reagent as an antigen.

29. A detection method of detecting an analyte in a liquid sample by using the detector according to anyone of Claims 1 to 28.