CLAIMS

1. A solid support appropriate for a multiplex analysis of at least one sample, said solid support comprising at least one compartment, said compartment comprising at least one control spot and at least two detection spots for an analyte, characterized in that said control spot is a spot for controlling the deposition of a sample, a spot for controlling the deposition of a detection ligand of an analyte, and/or a spot for controlling the deposition of a reporter, wherein

(a) the spot for controlling the deposition of a sample comprises at least one control capture ligand that specifically binds to a control compound naturally present in the sample to be analyzed, wherein said control capture ligand is not a nucleic acid;

(b) the spot for controlling the deposition of a detection ligand comprises at least one additive capture ligand that specifically binds to an additive that is added to the sample and said additive is not naturally present in a sample or derived from any compound present in the sample, wherein said additive capture ligand is not a nucleic acid; and

(c) the spot for the deposition of a reporter comprises an indirect marker or a carrier molecule coupled to the indirect marker, wherein the reporter specifically interacts with the indirect marker or the indirect marker coupled to the carrier molecule, optionally, in presence of a substrate to produce a detectable substrate.

2. The solid support according to claim 1, characterized in that said at least one control spot comprises at least one spot for controlling the deposition of a reporter.

3. The solid support according to claim 1 or 2, characterized in that said at least one control spot comprises at least one spot for controlling the deposition of a sample and at least one spot for controlling the deposition of a detection ligand of an analyte.

4. The solid support according to one of claims 1 or 2, characterized in that said at least one control spot comprises a spot for controlling the deposition of a sample.

5. The solid support according to one of claims 1 or 2, characterized in that said at least one control spot comprises a spot for controlling the deposition of a detection ligand of an analyte.

6. A multiplex analysis method for detecting at least n analytes in at least one sample, n being an integer greater than or equal to 2, said method comprising at least steps a), c) and e) or at least steps a), b), c) and d) as follows:

a) providing at least one solid support comprising at least one compartment according to one of claims 1 to 5,

b) placing, in the presence of the spots of said compartment or in the presence of said set of beads: l detection ligands of p analytes to be detected, and, if applicable, at least one additive, l preferably being greater than or equal to p,

c) placing a sample to be analyzed in the presence of the spots of said compartment or of said set of beads,

d) placing, in the presence of the spots of said compartment or of said set of beads:
l' detection ligands of m analytes to be detected, and, if applicable, at least one detection ligand of said additive(s), l' preferably being greater than or equal to m, and

e) placing, in the presence of the spots of said compartment or of said set of beads:
at least one detection ligand of a control compound and l'' detection ligands of y analytes to be detected, l'' preferably being greater than or equal to y,

l, l', l'', m, p and y being integers greater than or equal to 0 and the sum m+p+y being greater than or equal to 1.

7. The multiplex analysis method according to claim 6, comprising a subsequent step f) consisting of placing at least one reporter in the presence of the spots of said compartment or of said set of beads.

8. The multiplex analysis method according to claim 7, characterized in that the reporter or at least one of the reporters in step f) is coupled to an indirect marker, for example an enzyme, and in that said method comprises a subsequent step g) consisting of placing at least one second reporter of said indirect marker coupled to said reporter of step f) in the presence of the spots of said compartment or of said set of beads, said second reporter for example being a substrate, preferably chosen from among the luminol, isoluminol or one of their derivatives.

9. Use of at least one control of the deposition of a sample and/or at least one control of the deposition of a detection ligand of an analyte and/or a spot for controlling the deposition of a reporter, to secure a multiplex analysis of a sample, wherein

(a) the spot for controlling the deposition of a sample comprises at least one control capture ligand that specifically binds to a control compound naturally present in the sample to be analyzed, wherein said capture ligand is not a nucleic acid;

(b) the spot for controlling the deposition of a detection ligand comprises at least one additive capture ligand that specifically binds to an additive that is added to the sample and said additive is not naturally present in a sample or derived from any compound present in the sample, wherein said additive capture ligand is not a nucleic acid; and

(c) the spot for the deposition of a reporter comprises an indirect marker or a carrier molecule coupled to the indirect marker, wherein the reporter specifically interacts with the indirect marker or the indirect marker coupled to the carrier molecule, optionally, in presence of a substrate to produce a detectable substrate..

10. The use according to claim 9, wherein the at least one control spot comprises at least one control spot for the deposition of a reporter.