C L A I M S

1. A multi-nucleic-acid reaction tool comprising:

a support configured to support a reaction field of a liquid phase;

a plurality of primer fixing regions mutually independently arranged on at least a surface of the support, the surface being in contact with the reaction field when the liquid phase forms the reaction field; and

a plurality of types of primer sets releasably fixed, for each type, on the plurality of primer fixing regions and configured to amplify a plurality of types of target sequences, respectively; ~~and a thickener releasably fixed on each of the primer fixing regions.~~ wherein the primer sets are releasably fixed on the primer fixing regions by adding dropwise to each fixing region a solution comprising a primer set in water, in a buffer solution, or in an organic solvent, and drying the solution, such that the releasably fixed primer sets release from the primer fixing regions when contacted by the liquid phase that forms the reaction field.

2. The multi-nucleic-acid amplification reaction tool according to claim 1, wherein the support has a container shape or a channel shape.

3. The multi-nucleic-acid amplification reaction tool according to claim 1, further comprising a thickener releasably fixed on the primer fixing region.

4. The multi-nucleic-acid amplification reaction tool according to claim 1, further comprising a cover attached on the support and forming a chamber to retain a reaction solution together with the support.

~~4~~5. The multi-nucleic-acid amplification reaction tool according to claim 1, wherein the support comprises a base plate.

~~5~~6. The multi-nucleic-acid amplification reaction tool according to claim ~~4~~5, which is a nucleic acid detecting device, wherein the support comprises a groove portion at a first surface thereof,

the groove portion comprises a channel-type chamber for a nucleic acid sample to react, and

a cross section of the channel-type chamber is larger than a cross section of a region other than the channel-type chamber in the groove portion.

~~6~~7. The multi-nucleic-acid amplification reaction tool according to claim ~~4~~5, further comprising:

a sensor portion configured to detect a ~~for detection of~~ nucleic acid which is formed on the support;

a wire formed on the support and connected to the sensor; and

a protective film formed on the support,

wherein the multi-nucleic-acid amplification reaction tool is a nucleic acid detecting device that detects a nucleic acid amplification product by the sensor portion after carrying out a nucleic acid amplification reaction in a chamber for the sensor portion and a nucleic acid sample to react with each other, and

the protective film comprises at least an opening to expose a lower layer portion including a part of the support in a liquid contact region for the nucleic acid sample on the support.

~~7~~8. The multi-nucleic-acid amplification reaction tool according to claim ~~6~~7, wherein the sensor portion is an electrode.

~~8~~9. The multi-nucleic-acid amplification reaction tool according to claim ~~7~~8, wherein the protective film covers the wire in the liquid contact region.

~~9~~10. The multi-nucleic-acid amplification reaction tool according to claim ~~6~~7, wherein the

protective film is formed of at least one selected from the group consisting of polyethylene, ethylene, polypropylene, polyisobutylene, polyethylene terephthalate, unsaturated polyester, a fluorine-containing resin, polyvinyl chloride, polyvinylidene chloride, polyvinyl acetate, polyvinyl alcohol, polyvinyl acetal, an acrylic resin, polyacrylonitrile, polystyrene, an acetal resin, polycarbonate, polyamide, a phenol resin, a urea resin, an epoxy resin, a melamine resin, a styrene-acrylonitrile copolymer, an acrylonitrile-butadiene-styrene copolymer, a silicon resin, polyphenylene oxide, ~~and~~ polysulfone, ~~and~~ glass, quartz glass, alumina, sapphire, forsterite, silicon carbide and a metal oxide.

~~10~~11. The multi-nucleic-acid amplification reaction tool according to claim ~~6~~7, wherein the protective film comprises at least one resin selected from the group consisting of a novolak resin, an epoxy resin, a polyolefin resin and a silicon resin.

~~11~~12. The multi-nucleic-acid amplification reaction tool according to claim 1, the support comprising a first plate formed of a hard material;

the multi-nucleic-acid amplification reaction tool further comprising: a channel packing and a second plate;

wherein the channel packing comprises: a nucleic acid reaction channel; a first syringe configured to store a nucleic acid sample; a second syringe configured to store a chemical liquid that is used for nucleic acid reaction; a third syringe configured to store a liquid flowing out from the nucleic acid detection channel; a first channel that connects the first syringe and the second syringe and the nucleic acid detection channel; and a second channel that connects the nucleic acid detection channel and the third syringe; and the channel packing is integrally

formed of a soft material; and the second plate is formed of a hard material, and

the multi-nucleic-acid amplification reaction tool being a nucleic acid reaction cassette,

wherein the first plate faces a first surface of the channel packing, and the second plate faces a second surface opposite to the first surface, and the first plate and the second plate seal the channel packing together.

~~12~~13. A multi-nucleic-acid amplification reaction carrier comprising: a base body; a plurality of primer fixing regions mutually independently arranged on at least a surface of the base body; and a plurality of types of primer sets releasably fixed, for each type, on the plurality of primer fixing regions and configured to amplify a plurality of types target sequences, respectively; ~~and a thickener releasably fixed on each of the primer fixing regions.~~

wherein the primer sets are releasably fixed on the primer fixing regions by adding dropwise to each fixing region a solution comprising a primer set in water, in a buffer solution, or in an organic solvent, and drying the solution.

~~13~~14. A multi-nucleic-acid amplification method comprising:

releasably fixing, for each type, a plurality of types primer sets for amplification of a plurality of types of target nucleic acids, respectively, onto a plurality of mutually independent fixing regions of at least one surface of a support, by adding dropwise to each fixing region a solution comprising a primer set in water, in a buffer solution, or in an organic solvent, and drying the solution;

the support configured to support a reaction field of a liquid phase, and the surface being in contact with the reaction field, when the liquid phase forms

the reaction field;

adding a reaction solution for performing an amplification of nucleic acid onto the support, such that the releasably fixed primer sets release from the primer fixing regions when contacted by the reaction solution, to form a reaction field; and

carrying out an amplification reaction for each of the plurality of types target nucleic acids in the reaction field ~~in a presence of a thickener in the reaction solution~~.

15. The multi-nucleic acid amplification reaction tool according to claim 1, wherein a distance between adjacent primer fixing regions is in a range of 100 μm to 10 mm.

16. The multi-nucleic acid amplification reaction carrier according to claim 13, wherein a distance between adjacent primer fixing regions is in a range of 100 μm to 10 mm.

17. The multi-nucleic acid amplification method according to claim 14, wherein a distance between adjacent primer fixing regions is in a range of 100 μm to 10mm.