CLAIMS

~~1. A method of removing an RNA fraction with ≥ 200 nucleotides in length from a whole blood sample comprising the steps of:~~

~~(i) providing an absorbent probe comprising a hydrophilic polymeric material in/to which whole blood from the whole blood sample has been absorbed,~~

~~(ii) contacting the absorbent probe with a fluid, and~~

~~(iii) recovering the fluid from step (ii), thereby removing the RNA fraction with ≥ 200 nucleotides in length.~~

1~~2~~. A method of purifying an RNA fraction with < 200 nucleotides in length from a whole blood sample comprising the steps of:

(i) providing an absorbent probe comprising a hydrophilic polymeric material in/to which whole blood from the whole blood sample has been absorbed,

(ii) contacting the absorbent probe with a fluid comprising a chaotropic agent, ~~and~~

(iii) recovering the fluid comprising a chaotropic agent from step (ii), thereby ~~purifying~~ removing the RNA fraction with ~~< 200~~ ≥ 200 nucleotides in length, and

(iv) purifying the RNA fraction with < 200 nucleotides in length from the recovered fluid by one or more separation techniques selected from the group consisting of centrifugation, evaporation/reconstitution, concentration, precipitation, liquid/liquid extraction, and solid phase extraction,

wherein the RNA fraction with ≥ 200 nucleotides in length does not enter the fluid and remains absorbed to the hydrophilic polymeric material,

wherein the hydrophilic polymeric material has a density of ≤ 6 g/cm^3, and

wherein the hydrophilic polymeric material is selected from the group consisting of cotton, a polysaccharide, a polyolefin, and a polyester.

~~3. The method of claims 1 or 2, wherein the hydrophilic polymeric material has a density of ≤ 6 g/cm^3, preferably of ≤ 4 g/cm^3.~~

2~~4~~. The method of ~~any one of claims 1 to 3~~ claim 1, wherein: ~~the hydrophilic polymeric material is selected from the group consisting of cotton, a polysaccharide, a polyolefin, and a polyester, and wherein preferably~~

(i) the polysaccharide is cellulose,

(ii) the polyolefin is selected from the group consisting of polyethylene, polypropylene, polybutylene, polyisobutylene, and polymethylpentene, or

(iii) the polyester is selected from the group consisting of polycarbonate and polyethylenterephthalate.

~~5. The method of any one of claims 2 to 4, wherein the method further comprises the step of:~~

~~(iv) isolating the RNA fraction with < 200 nucleotides in length by one or more separation techniques,~~

~~wherein preferably the one or more separation techniques are selected from the group consisting of centrifugation, evaporation/reconstitution, concentration, precipitation, liquid/liquid extraction, and solid phase extraction.~~

3. The method of claim 1 or 2, wherein the chaotropic agent is selected from the group consisting of guanidinium thiocyanate, guanidinium isothiocyanate, guanidinium hydrochloride, guanidinium chloride, alkali thiocyanate, alkali isothiocyanate, alkali iodide, and alkali perchlorate.

4~~6~~. A method of determining the level of RNA molecules with < 200 nucleotides in length comprising the steps of:

(i) carrying out the method of any one of claims ~~2~~ 1 to ~~5~~ 3, and

(ii) determining the level of RNA molecules with < 200 nucleotides in length by a suitable technique.

~~7. The method of claim 6, wherein the suitable technique is selected from the group consisting of nucleic acid hybridization, nucleic acid amplification, polymerase extension, sequencing, and mass spectroscopy, or any combination thereof.~~

5~~8~~. A method for diagnosing a disease in an individual comprising the steps of:

(i) carrying out the method of any one of claims ~~2~~ 1 to ~~5~~ 3, wherein the whole blood sample is from an individual,

(ii) determining the level of RNA molecules with < 200 nucleotides in length by a suitable technique,

(iii) comparing said level to one or more reference level(s), and

(iv) diagnosing or differentially diagnosing whether the individual is afflicted by the disease based on the comparison.

~~9. The method of claim 8, wherein the suitable technique is selected from the group consisting of nucleic acid hybridization, nucleic acid amplification, polymerase extension, sequencing, and mass spectroscopy, or any combination thereof.~~

6~~10~~. A method for diagnosing a disease in an individual comprising the steps of:

(i) carrying out the method of ~~claims 6 or 7~~ claim 4, wherein the whole blood sample is from an individual,

(ii) comparing said level to one or more reference level(s), and

(iii) diagnosing or differentially diagnosing whether the individual is afflicted by the disease based on the comparison.

7~~11~~. The method of ~~any one of claims 8 to 10~~ claim 5 or 6, wherein the one or more reference level(s) are determined by measuring one or more reference whole blood sample(s) from

one or more healthy subject(s),

one or more subject(s) suffering from a disease, and/or

one or more subject(s) suffering from another disease.

~~12. Use of a hydrophilic polymeric material for removing an RNA fraction with ≥ 200 nucleotides in length from a whole blood sample.~~

8~~13~~. Use of a hydrophilic polymeric material for purifying an RNA fraction with < 200 nucleotides in length from a whole blood sample, wherein the hydrophilic polymeric material has a density of ≤ 6 g/cm^3, and wherein the hydrophilic polymeric material is selected from the group consisting of cotton, a polysaccharide, a polyolefin, and a polyester.

~~14. The use of claims 12 or 13, wherein the hydrophilic polymeric material has a density of ≤ 6 g/cm^3, preferably of ≤ 4 g/cm^3.~~

9~~15~~. The use of ~~any one of claims 12 to 14~~ claim 8, wherein: ~~the hydrophilic polymeric material is selected from the group consisting of cotton, a polysaccharide, a polyolefin, and a polyester, and wherein preferably~~

(i) the polysaccharide is cellulose,

(ii) the polyolefin is selected from the group consisting of polyethylene, polypropylene, polybutylene, polyisobutylene, and polymethylpentene, or

(iii) the polyester is selected from the group consisting of polycarbonate and polyethylenterephthalate.

10~~16~~. Use of a method according to ~~claims 6 or 7~~ claim 4 for diagnosing or differentially diagnosing a disease.

~~17. A kit comprising~~

~~(i) an absorbent probe comprising a hydrophilic polymeric material.~~

~~18. The kit of claim 17, wherein the kit is useful for taking a whole blood sample.~~

11~~19~~. Use of a ~~A~~ kit for purifying an RNA fraction with < 200 nucleotides in length from a whole blood sample, wherein the kit comprises ~~comprising~~:

(i) an absorbent probe comprising a hydrophilic polymeric material; and

(ii) a fluid comprising a chaotropic agent to reconstitute whole blood absorbed in/to an absorbent probe comprising a hydrophilic polymeric material,

wherein the hydrophilic polymeric material has a density of ≤ 6 g/cm^3, and wherein the hydrophilic polymeric material is selected from the group consisting of cotton, a polysaccharide, a polyolefin, and a polyester.

12~~20~~. The ~~kit~~ use of claim ~~19~~ 11, wherein the kit is ~~useful~~ used for carrying out the methods of any one of claims 1 to ~~11~~ 7.

13. The use of claim 11 or 12, wherein the chaotropic agent is selected from the group consisting of guanidinium thiocyanate, guanidinium isothiocyanate, guanidinium hydrochloride, guanidinium chloride, alkali thiocyanate, alkali isothiocyanate, alkali iodide, and alkali perchlorate.