

What is claimed is:

1. ~~— A method comprising:~~

~~— a) detecting at least one polypeptides in a sample from a subject; wherein the at least one polypeptide is selected from the group consisting of:~~

~~— i) Farnesyl pyrophosphate synthase, neurofibromin I, Glyceraldehyde 3 phosphate dehydrogenase, Protein 1 containing fibronectin domain type III, Eukaryotic initiation factor 4A-I, L-lactate dehydrogenase chain B, Nuclear heterogeneous Ribonucleoprotein A1, 1-like protein 1 polycystic kidney disease, Heat Shock Protein Cognate 71 kDa, Ankyrin 3, Rho 32 GTPase-activating protein, Cytoskeletal Keratin 78 type II, Alpha 3 collagen chain (VI), Beta subunit of proteasome type 5, Heterogeneous nuclear ribonucleoproteins A2/B1, Histone H2B type 1-B, homolog of DnaJ subfamily C member 13, Beta enolase, Glutathione S-transferase P and Glutathione S-transferase Mu 3 and a fragment thereof; or~~

~~— ii) a polypeptide having the amino acid sequence with at least about 70% sequence identity to SEQ ID NOs: 1-20 or a fragment thereof; and~~

~~— b) diagnosing cervical cancer based on the detection of the at least one polypeptide.~~

2. ~~The method of claim 1, wherein the sample is selected from the group consisting of blood, plasma, urine, saliva, sweat, organ biopsy, cerebrospinal fluid (CSF), tear, semen, vaginal fluid, feces, skin, and hair.~~

3. ~~The method of claim 1, further comprising detecting at least one polypeptide selected from the group consisting of:~~

~~(a) Farnesyl pyrophosphate synthase and at least one polypeptide selected from the group consisting of neurofibromin I, Glyceraldehyde 3 phosphate dehydrogenase, Protein 1 containing fibronectin domain type III, Eukaryotic initiation factor 4A-I, L-lactate dehydrogenase chain B, Nuclear heterogeneous Ribonucleoprotein A1, 1-like protein 1 polycystic kidney disease, Heat shock protein cognate 71 kDa, Ankyrin 3, Rho 32 GTPase-activating protein, Cytoskeletal Keratin 78 type II, Alpha 3 collagen chain (VI), Beta subunit of proteasome type 5, Heterogeneous nuclear ribonucleoproteins A2/B1, Histone H2B type 1-B, homolog of DnaJ subfamily C member 13, Beta enolase, Glutathione S-transferase P and Glutathione S-transferase Mu 3; or~~

~~(b) a polypeptide having at least 70% sequence identity to the amino acid sequence of SEQ ID NO:1 and at least one polypeptide selected from the group consisting of a~~

polypeptide having at least 70% sequence identity to the amino acid sequence of SEQ ID NOs:2-20.

4. ~~The method of claim 1, wherein the detecting is by protein microarray, fluorescence detection, flow cytometry, microfluidic device, lateral flow assay or immunoassay.~~

5. ~~The method of claim 1, further comprising administering a treatment to the subject.~~

61. An in vitro method of diagnosing cervical cancer in a subject comprising:

a) detecting nuclear heterogeneous ribonucleoprotein A1a plurality of polypeptides in a sample from a subject; wherein the polypeptides are selected from the group consisting of:

~~————— i) Farnesyl pyrophosphate synthase, neurofibromin 1, Glyceraldehyde 3 phosphate dehydrogenase, Protein 1 containing fibronectin domain type III, Eukaryotic initiation factor 4A-I, L-lactate dehydrogenase chain B, Nuclear heterogeneous Ribonucleoprotein A1, 1-like protein 1 polycystic kidney disease, Heat shock protein cognate protein 71 kDa, Ankyrin 3, Rho 32 GTPase activating protein, Cytoskeletal Keratin 78 type II, Alpha 3 collagen chain (VI), Beta subunit of proteasome type 5, Heterogeneous nuclear ribonucleoproteins A2/B1, Histone H2B type 1-B, homolog of DnaJ subfamily C member 13, Beta-enolase, Glutathione S-transferase P and Glutathione S-transferase Mu 3; or~~

~~————— ii) a polypeptide having the amino acid sequence of SEQ ID NOs: 1-20; and~~

b) diagnosing cervical cancer based on the detection of nuclear heterogeneous ribonucleoprotein A1, wherein the overexpression of the protein, compared to a control sample is indicative of cervical cancer,

wherein the sample is selected from blood, plasma, serum, saliva, sweat and tears~~the plurality of polypeptides, thereby diagnosing cervical cancer.~~

7. ~~The method of claim 6, wherein the sample is selected from the group consisting of blood, plasma, urine, saliva, sweat, organ biopsy, cerebrospinal fluid (CSF), tear, semen, vaginal fluid, feces, skin, and hair.~~

82. The in vitro method ~~of according to claim 61, wherein it further comprising comprises~~ detecting at least one polypeptide selected from the group consisting of:

~~(a) Farnesyl- farnesyl pyrophosphate synthase, and at least one polypeptide selected from the group consisting of neurofibromin I1, Glyceraldehydeglyceraldehyde-3 phosphate dehydrogenase, Protein-protein 1 containing fibronectin domain type III, Eukaryotic eukaryotic initiation factor 4A-I, L-lactate dehydrogenase chain B, Nuclear heterogeneous Ribonucleoprotein A1, 1-like protein 1 polycystic kidney disease, Heat heat shock protein cognate protein 71 kDa, Ankyrinankyrin-3, Rho-rho 32-23 GTPase-activating protein,~~

~~Cytoskeletal~~ ~~cytoskeletal~~ ~~Keratin~~ ~~keratin~~ 78 type II, ~~Alpha~~ ~~alpha~~-3 collagen chain (VI), ~~Beta~~ ~~beta~~ subunit of proteasome type-5, ~~Heterogeneous~~ ~~heterogeneous~~ nuclear ribonucleoproteins A2/B1, ~~Histone~~ ~~histone~~ H2B type 1-B, homolog of DnaJ subfamily C member 13, ~~Beta~~ ~~beta~~ enolase, ~~Glutathione~~ ~~glutathione~~ S-transferase P and ~~Glutathione~~ ~~glutathione~~ S-transferase Mu 3; or

(b) a polypeptide having at least 70% sequence identity to the amino acid sequence of SEQ ID NO:1 and at least one polypeptide selected from the group consisting of a polypeptide having at least 70% sequence identity to the amino acid sequence of SEQ ID NOs:2-20.

3. The in vitro method according to claim 2, wherein the method is also useful for diagnosing pre-cancerous cervical lesions.

4. The in vitro method of any of claims 1-3, wherein the detecting is by protein microarray, fluorescence detection, flow cytometry, microfluidic device, lateral flow assay or immunoassay.

5. An in vitro method of predicting a response to treatment for a subject having cervical cancer in a subject comprising:

a) detecting nuclear heterogeneous ribonucleoprotein A1 in a sample from a subject; and
 b) predicting a response to treatment based on the detection of nuclear heterogeneous ribonucleoprotein A1 in a sample, and its comparison to a control sample, wherein the sample is selected from blood, plasma, serum, saliva, sweat and tears.

6. The in vitro method according to claim 5, wherein it further comprises detecting at least one polypeptide selected from the group consisting of farnesyl pyrophosphate synthase, neurofibromin 1, glyceraldehyde-3 phosphate dehydrogenase, protein 1 containing fibronectin domain type III, eukaryotic initiation factor 4A-I, l-lactate dehydrogenase chain B, 1-like protein 1 polycystic kidney disease, heat shock protein cognate protein 71 kDa, ankyrin-3, rho 23 GTPase-activating protein, cytoskeletal keratin 78 type II, alpha-3 collagen chain (VI), beta subunit of proteasome type-5, heterogeneous nuclear ribonucleoproteins A2/B1, histone H2B type 1-B, homolog of DnaJ subfamily C member 13, beta enolase, glutathione S-transferase P and glutathione S-transferase Mu 3.

7. The in vitro method according to claim 6, wherein the method is also useful for predicting a response to treatment of pre-cancerous cervical lesions.

8. The in vitro method of any of claims 5-7, wherein the detecting is by protein microarray, fluorescence detection, flow cytometry, microfluidic device, lateral flow assay or immunoassay.

9. A kit for use in in vitro diagnosing of cervical cancer, the kit comprising:

a) a sample collection unit;

b) a lateral flow device; and

c) instructions for using the lateral flow device,

wherein the lateral flow device is for detecting nuclear heterogeneous ribonucleoprotein A1 in a sample selected from blood, plasma, serum, saliva, sweat and tear.

10. The kit according to claim 9, wherein the lateral flow device is also suitable for detecting at least one polypeptide selected from the group consisting of farnesyl pyrophosphate synthase, neurofibromin 1, glyceraldehyde-3 phosphate dehydrogenase, protein 1 containing fibronectin domain type III, eukaryotic initiation factor 4A-I, l-lactate dehydrogenase chain B, 1-like protein 1 polycystic kidney disease, heat shock protein cognate protein 71 kDa, ankyrin-3, rho 23 GTPase-activating protein, cytoskeletal keratin 78 type II, alpha-3 collagen chain (VI), beta subunit of proteasome type-5, heterogeneous nuclear ribonucleoproteins A2/B1, histone H2B type 1-B, homolog of DnaJ subfamily C member 13, beta enolase, glutathione S-transferase P and glutathione S-transferase Mu 3.

11. The kit according to claim 10, wherein the kit is also useful for diagnosing pre-cancerous cervical lesions.

9. — A method of treating cervical cancer in a subject in need thereof, the method comprising — a) detecting a plurality of polypeptides in a sample from a subject; wherein the polypeptides are selected from the group consisting of:

——— i) Farnesyl pyrophosphate synthase, neurofibromin 1, Glyceraldehyde 3 phosphate dehydrogenase, Protein 1 containing fibronectin domain type III, Eukaryotic initiation factor 4A-I, L-lactate dehydrogenase chain B, Nuclear heterogeneous Ribonucleoprotein A1, 1-like protein 1 polycystic kidney disease, Heat shock protein cognate 71 kDa, Ankyrin-3, Rho 32 GTPase-activating protein, Cytoskeletal Keratin 78 type II, Alpha-3 collagen chain (VI), Beta subunit of proteasome type 5, Heterogeneous nuclear ribonucleoproteins A2/B1, Histone H2B type 1-B, homolog of DnaJ subfamily C member 13, Beta enolase, Glutathione S-transferase P and Glutathione S-transferase Mu 3; or

——— ii) a polypeptide having the amino acid sequence of SEQ ID NOs: 1-20;

——— b) diagnosing cervical cancer based on the detection of the plurality of polypeptides; and

——— c) administering a treatment to the subject, thereby treating the subject.

10. — ~~The method of claim 9, wherein the sample is a blood sample.~~
11. — ~~The method of claim 9, wherein the treatment is selected from the group consisting of surgery, radiation, chemotherapy, targeted therapy and immunotherapy.~~
12. — ~~The method of claim 11, where in the chemotherapy is selected from the group consisting of Cisplatin, Carboplatin, Paclitaxel, Topotecan, docetaxel, ifosfamide, 5-fluorouracil, irinotecan, gemcitabine and mitomycin.~~
13. — ~~The method of claim 11, wherein the targeted therapy is bevacizumab.~~
14. — ~~The method of claim 11, wherein the immunotherapy is pembrolizumab.~~