

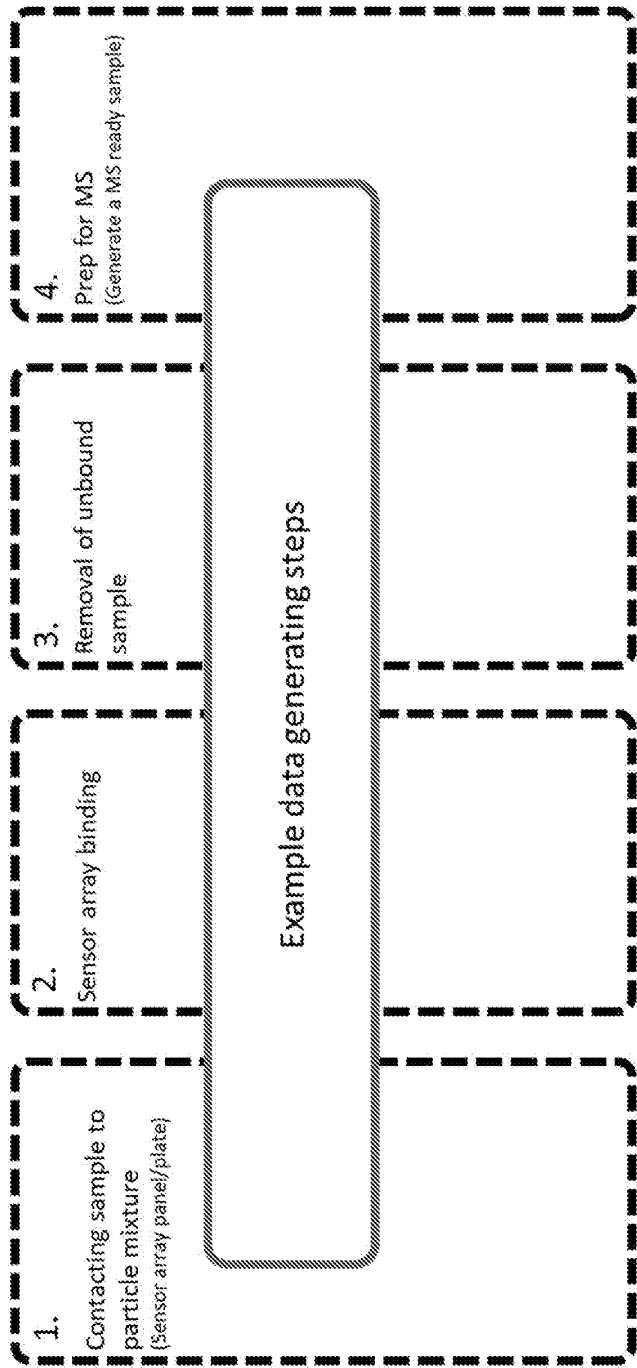


FIG. 1

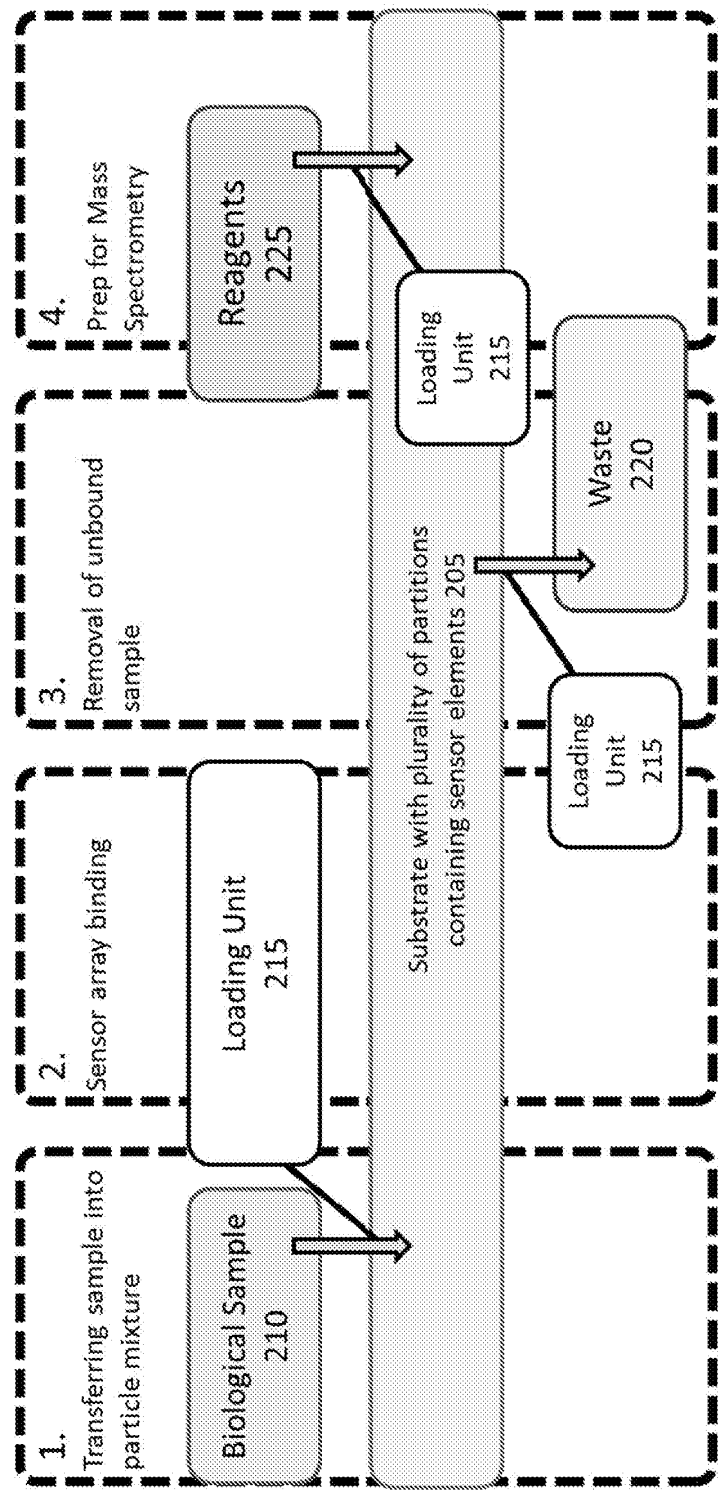
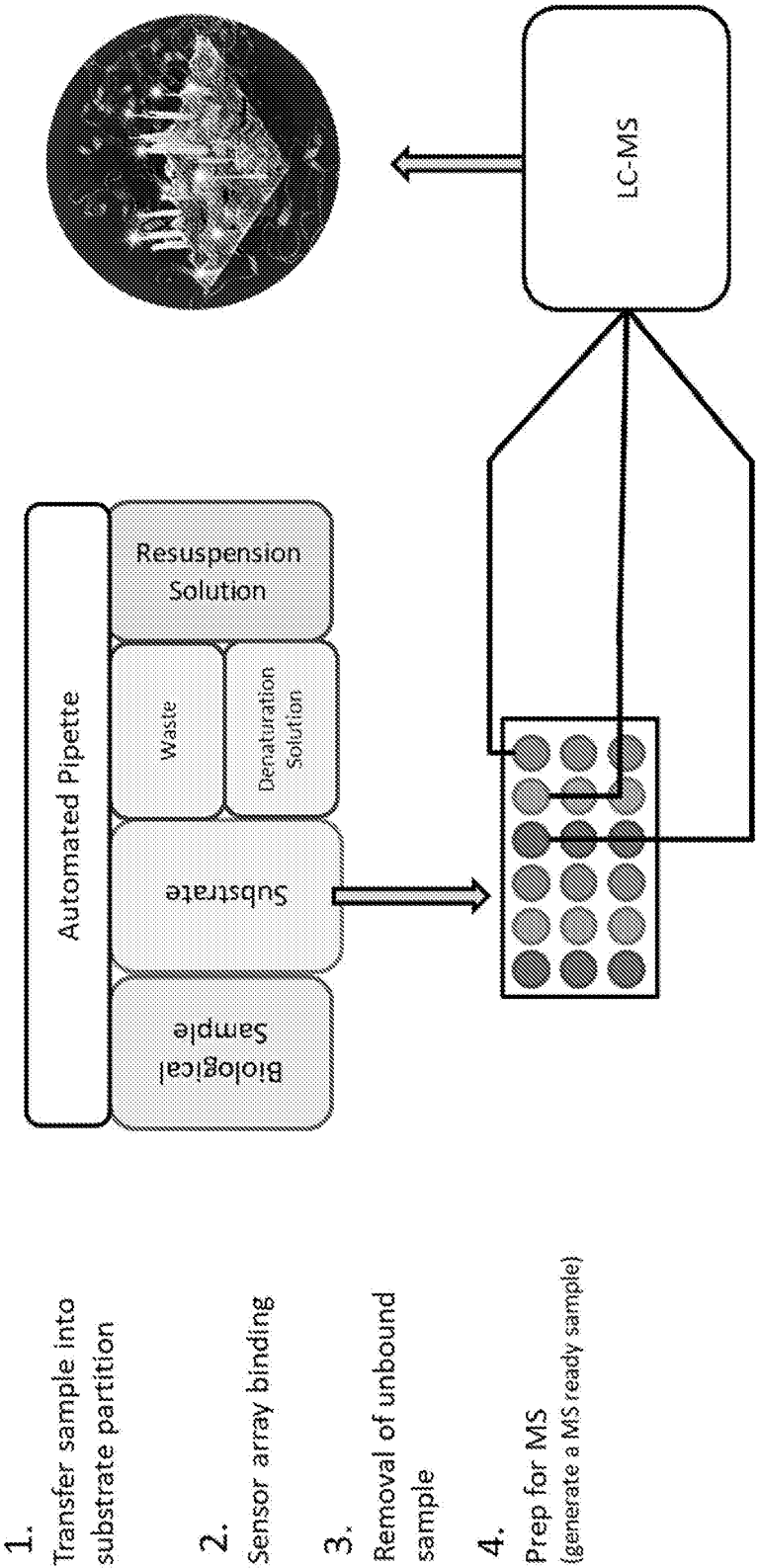


FIG. 2



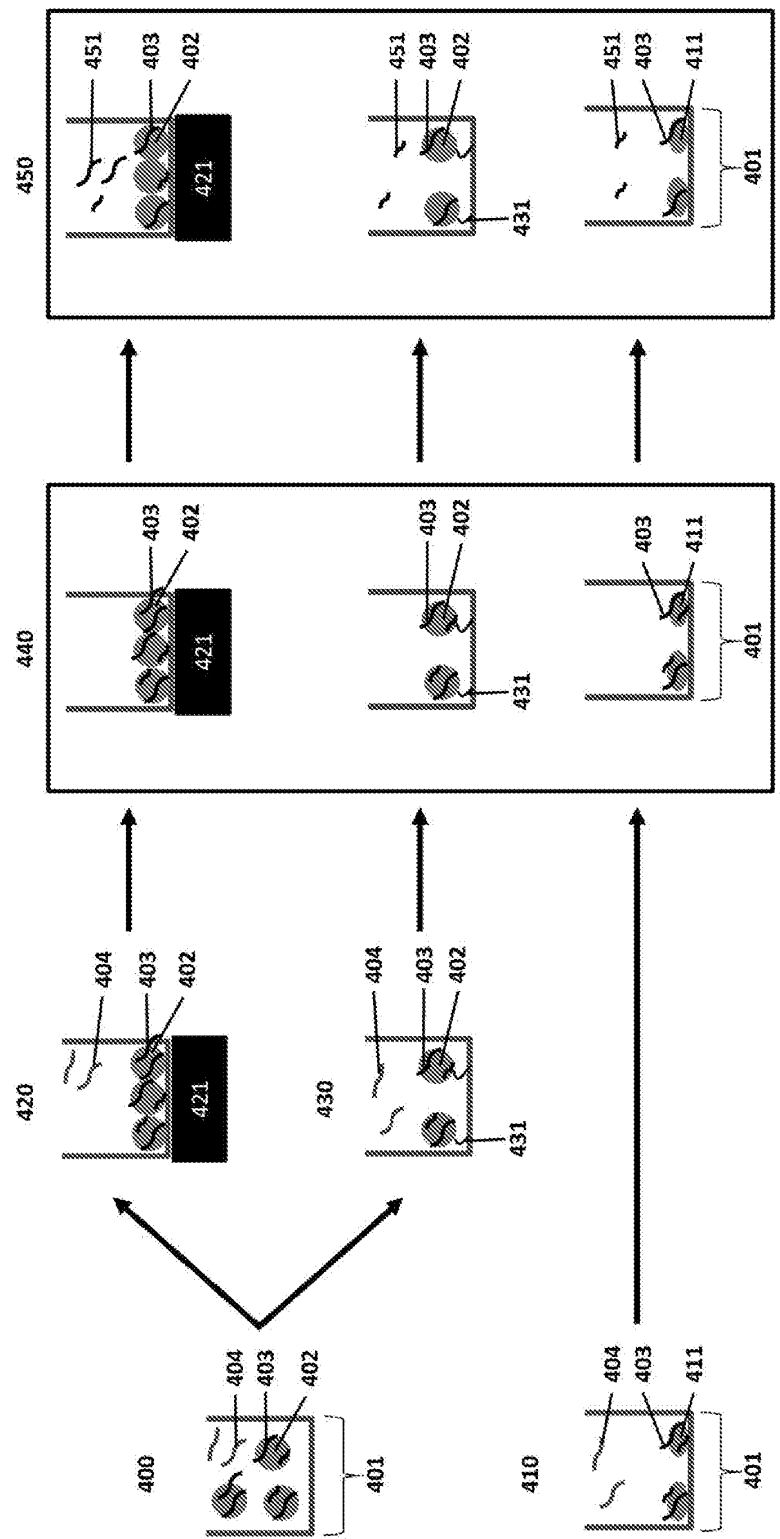


FIG. 4

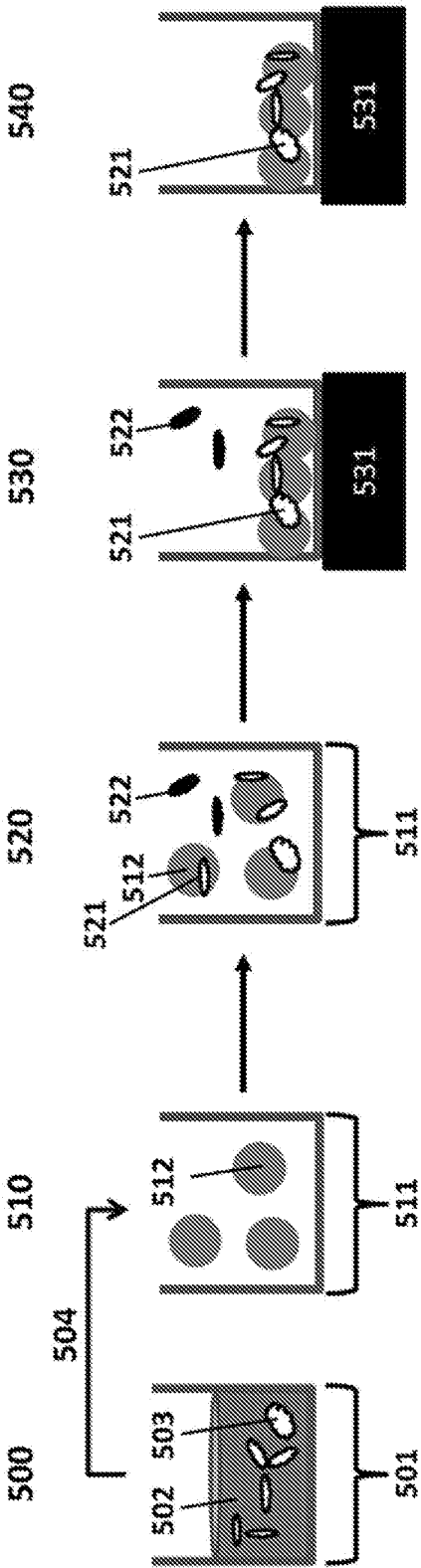


FIG. 5

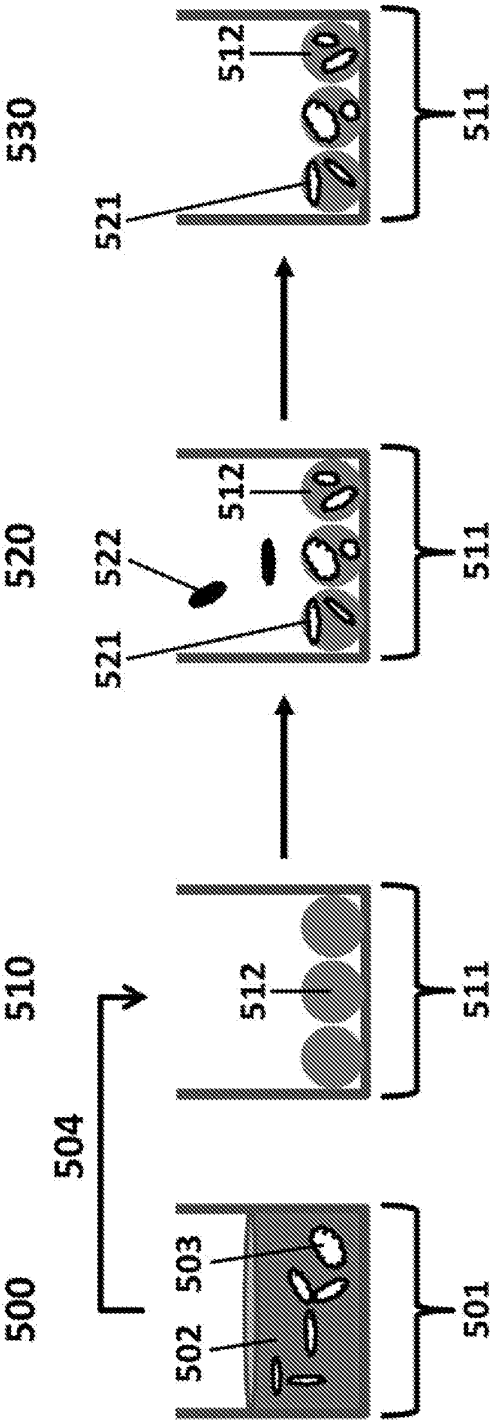


FIG.6

Surface Chemistries for Magnetic Core Nanoparticles (MNP) and  
used for Corona Experimentation

| Particle type                                   | Surface functionalization                                                                                                     |                                                                                                                                         |                                                                                                                                        |                                                                                                                                          |                                                                                                                                   |                                                                                                                                  |                                                                                                                                  |                                                                                                                             |                                                                                                                             |  |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--|
| Iron oxide                                      | Paramagnetic, Polyacrylic acid (PAA)                                                                                          |                                                                                                                                         |                                                                                                                                        |                                                                                                                                          |                                                                                                                                   |                                                                                                                                  |                                                                                                                                  |                                                                                                                             |                                                                                                                             |  |
| Iron oxide<br>(Superparamagnetic)               | <br>Citrate                                | <br>Benzene dicarboxylic acid                        | <br>Benzene tricarboxylic acid                      | <br>Benzene tetracarboxylic acid                      | <br>Hexamethylenediamine                        | <br>Diethylenetriamine                          | <br>Polyethyleneimine                           | <br>Polycarboxylate                        | <br>Resorcinol-formaldehyde                |  |
|                                                 | <br>$\text{Fe}_3\text{O}_4/\text{SiO}_2$   | <br>$\text{Fe}_3\text{O}_4/\text{SiO}_2\text{-NH}_2$ | <br>$\text{Fe}_3\text{O}_4/\text{SiO}_2\text{-C=C}$ | <br>$\text{Fe}_3\text{O}_4/\text{PSI}$                | <br>$\text{Fe}_3\text{O}_4/\text{P(Si-co-MAA)}$ | <br>$\text{Fe}_3\text{O}_4/\text{P(St-co-MAA)}$ | <br>$\text{Fe}_3\text{O}_4/\text{P(St-co-MAA)}$ | <br>$\text{Fe}_3\text{O}_4/\text{PDMAEMA}$ | <br>$\text{Fe}_3\text{O}_4/\text{PVBIMAC}$ |  |
| Iron oxide<br>Core-shell<br>(Superparamagnetic) | <br>$\text{Fe}_3\text{O}_4/\text{SiO}_2$ | <br>$\text{Fe}_3\text{O}_4/\text{POEGMA}$          | <br>$\text{Fe}_3\text{O}_4/\text{PVP}$            | <br>$\text{Fe}_3\text{O}_4/\text{SiO}_2\text{-DMA}$ |                                                                                                                                   |                                                                                                                                  |                                                                                                                                  |                                                                                                                             |                                                                                                                             |  |

FIG. 7

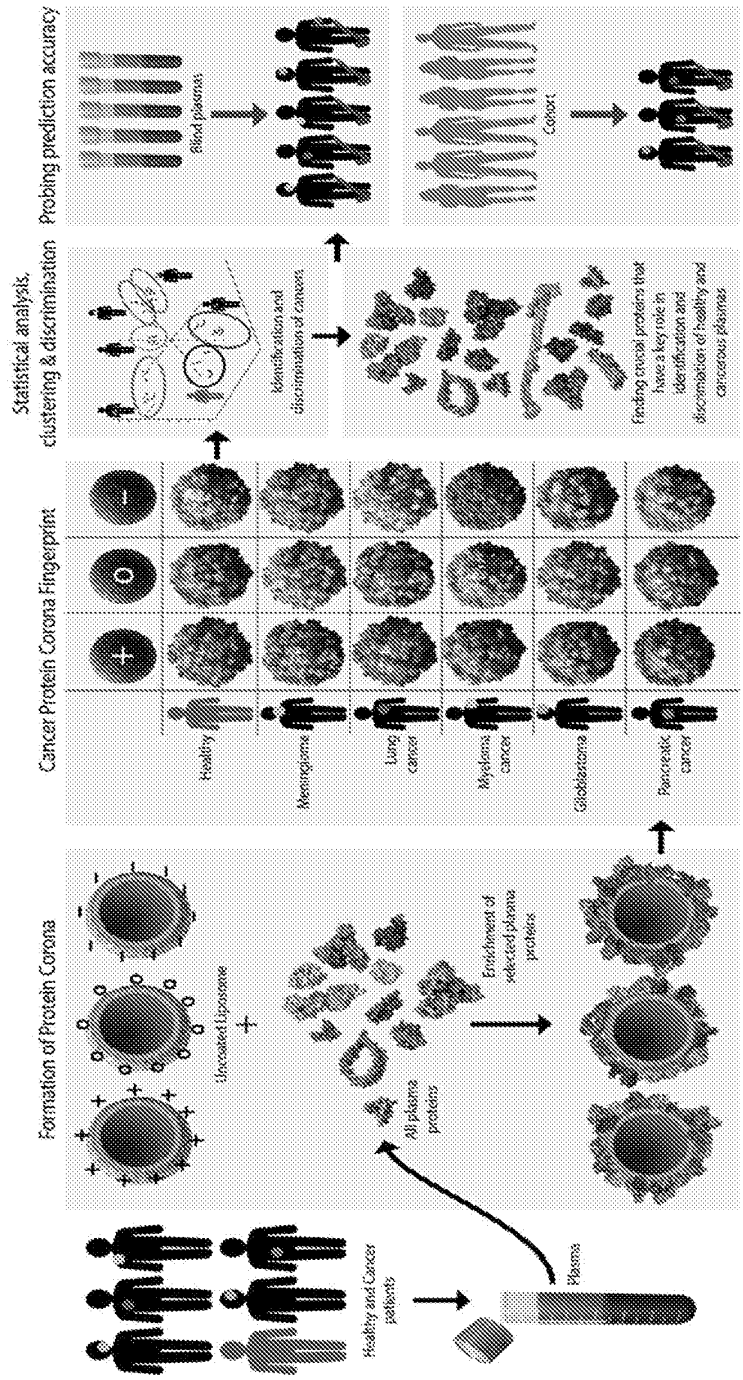


FIG. 8

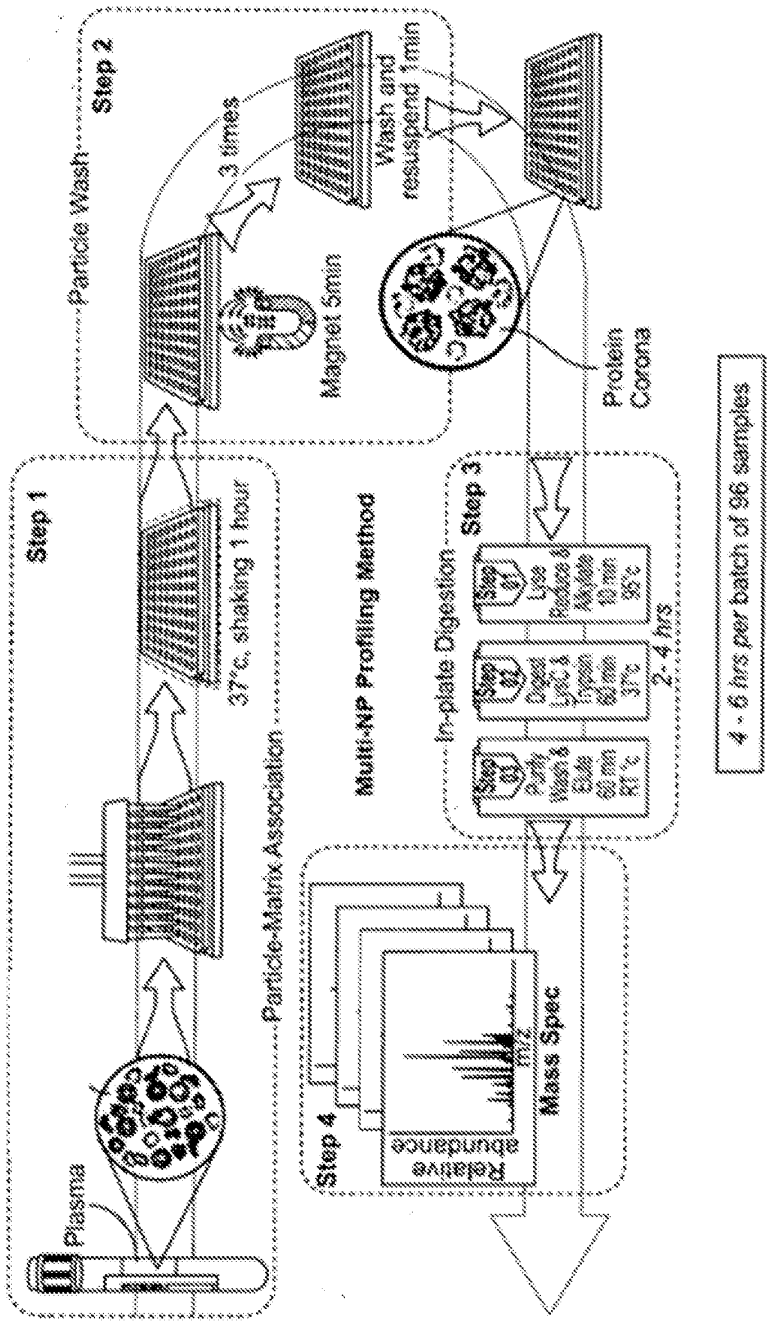


FIG. 9

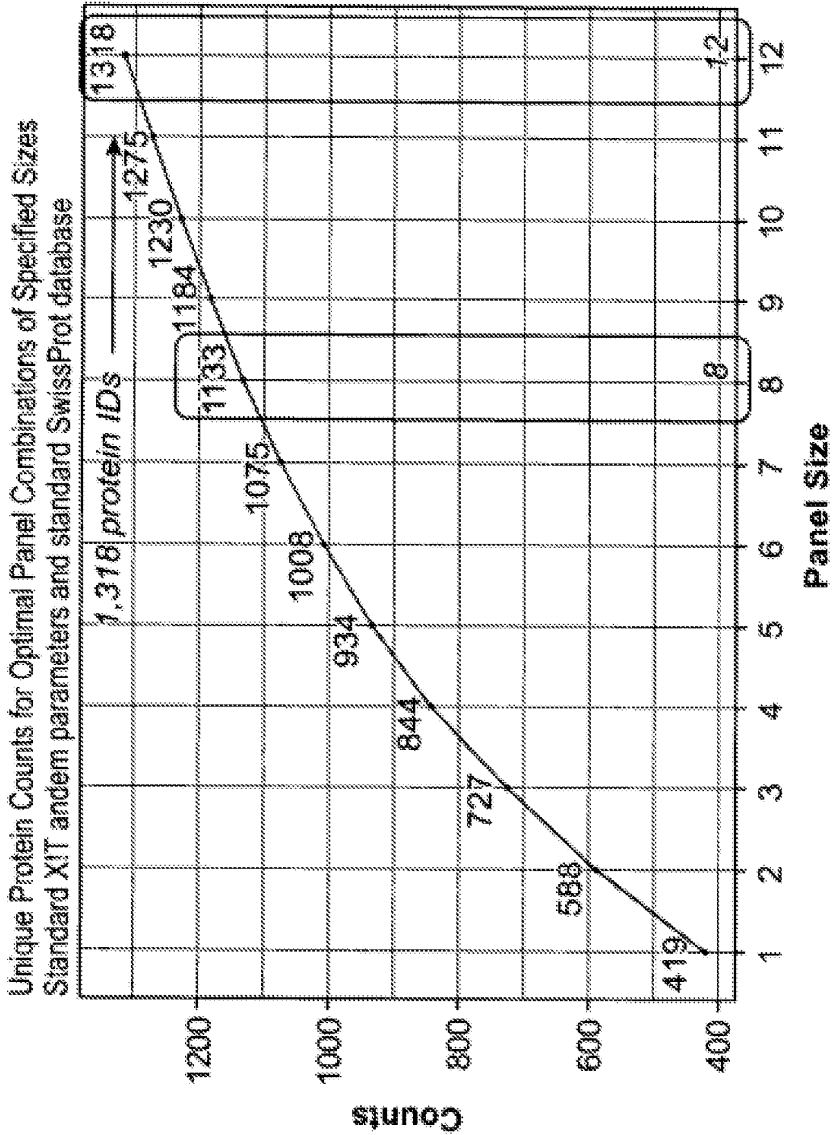


FIG. 10

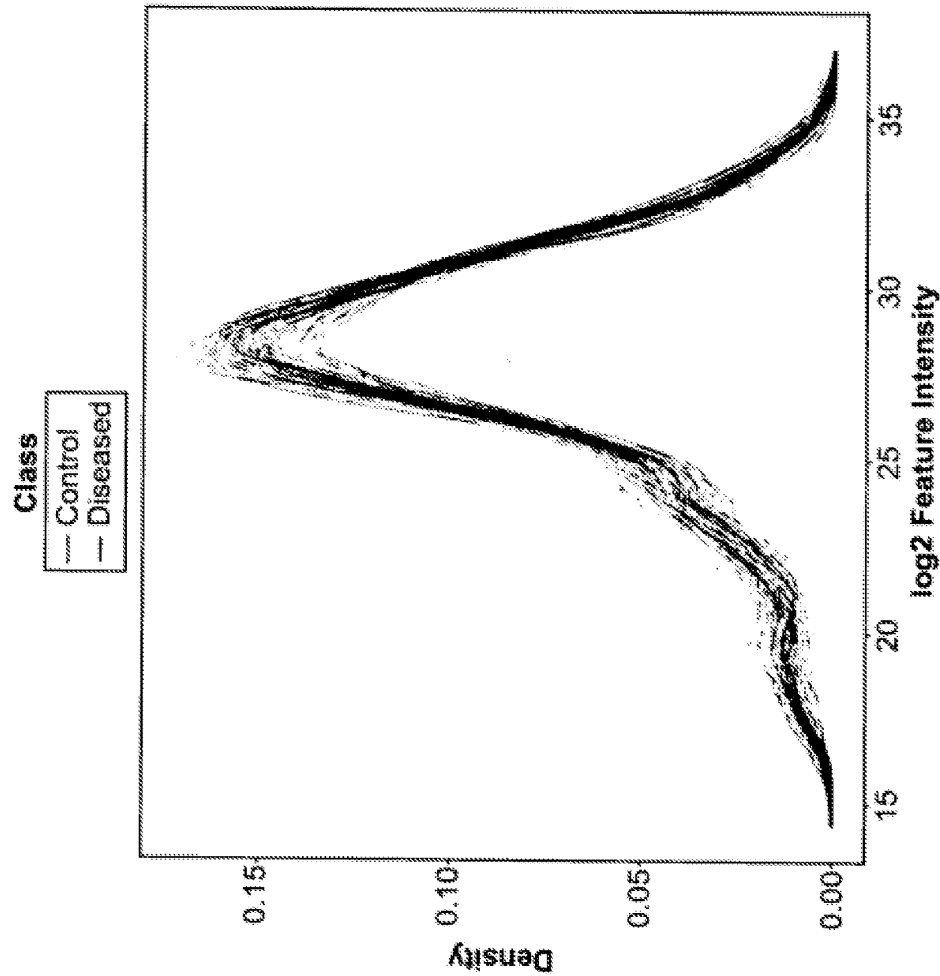


FIG. 11

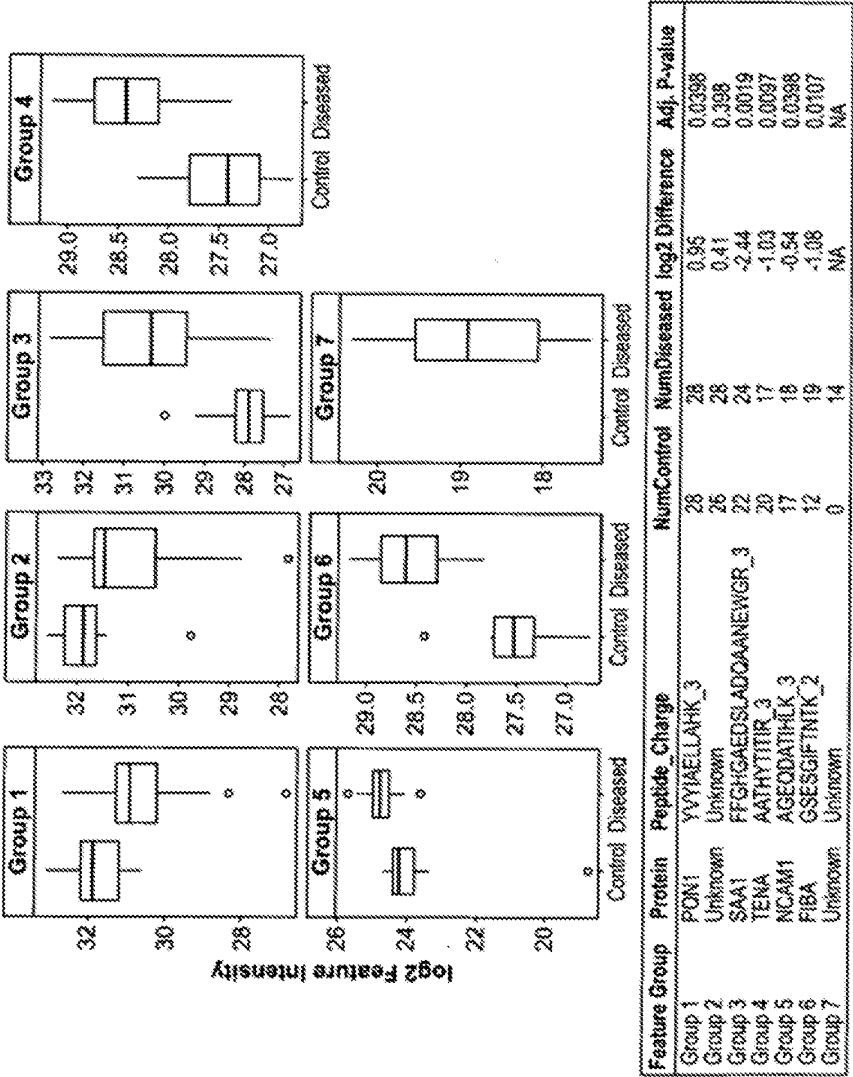


FIG. 12

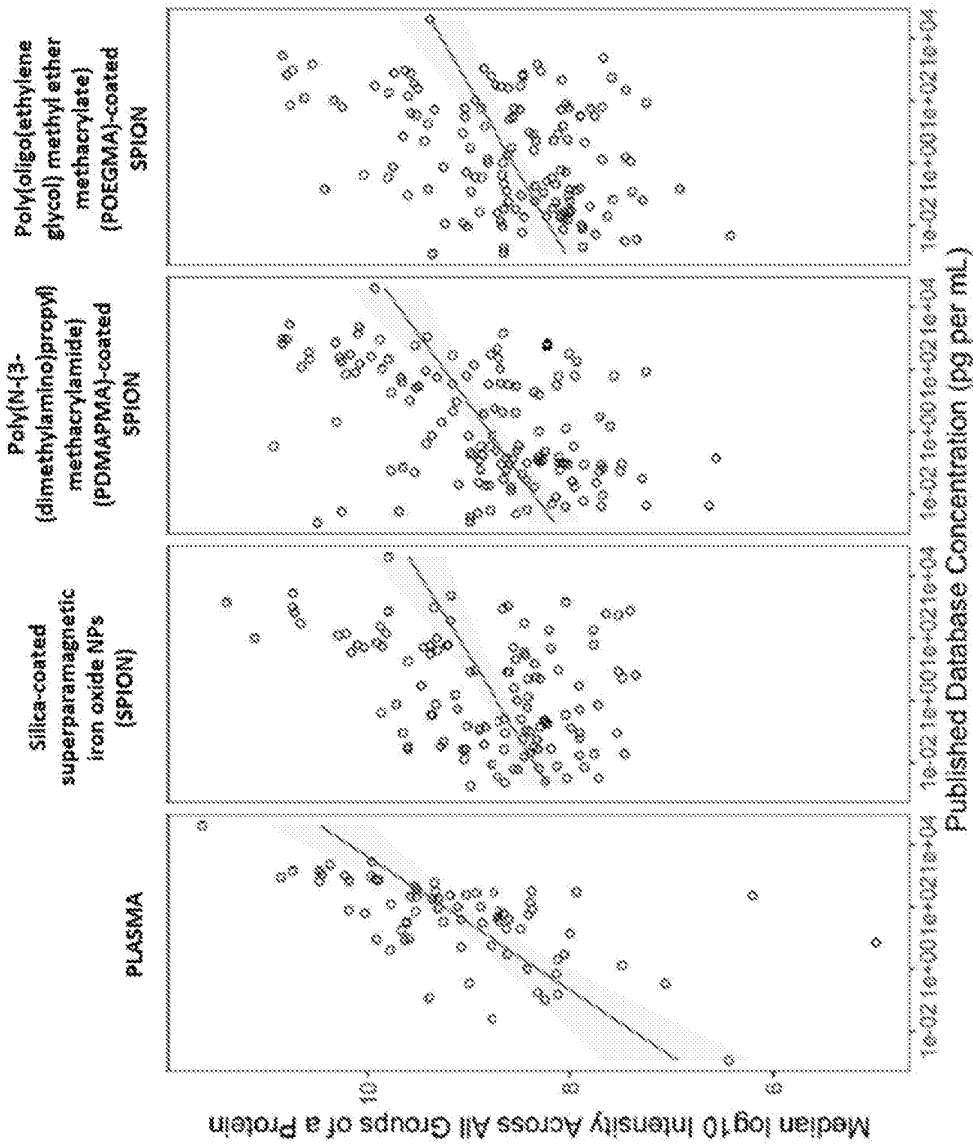


FIG. 13

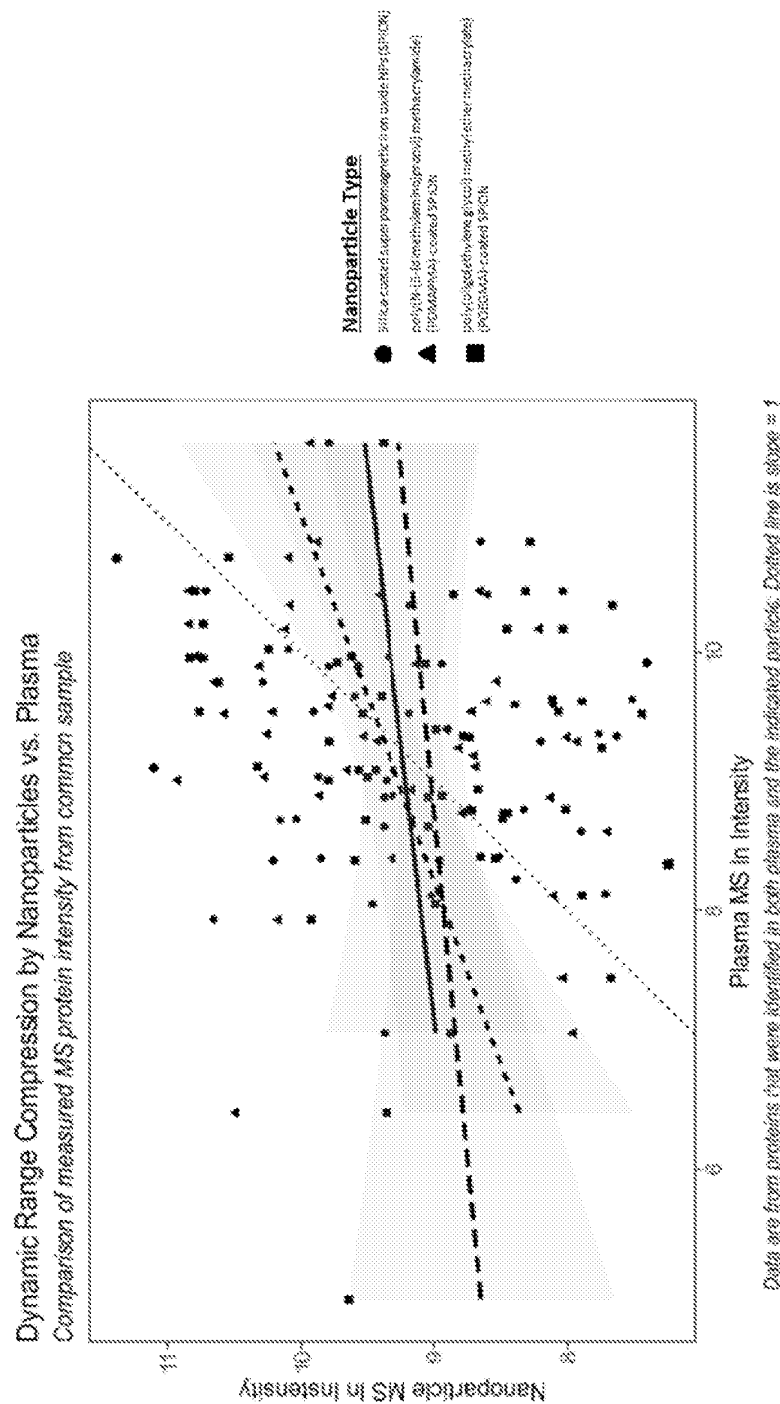


FIG. 14