

Claims

1. A method for detecting a biological or chemical entity in a urine sample, wherein the biological or chemical entity is associated with microbial sourced extracellular vesicles, comprising:
 - (a) processing the sample ~~to decrease/minimize/reduce human intelectin (hIntL) binding of microbial antigens including galactofuranose residues present in the sample;~~
 - (b) using a detection assay to detect the presence of the microbial sourced extracellular vesicles and to isolate the microbial sourced extracellular vesicles,
 - (c) processing the microbial sourced extracellular vesicles to expose or release the biological or chemical entity,
 - (d) contacting the processed sample from (a) with at least one antibody specific for at least one antigen, polysaccharide or glycoprotein ~~comprising a galactofuranose residue in an~~ effective amount to produce a detectable amount of antibody-antigen complex; and
 - (e) detecting the presence of at least one antibody-antigen complex, wherein the detection of the presence of at least one antibody-antigen complex is diagnostic of the presence of microbial sourced extracellular vesicles in the sample.
2. The method of claim 1, wherein in step (a) ~~processing/treating~~ the sample comprises contacting the sample with a substrate.
3. The method of claim 2, wherein the substrate comprises an intelectin-binding component.
4. The method of claim 3, wherein the intelectin-binding component comprises one or more of glycerol, 3-Keto-2-deoxyoctonic acid; D-glycerol-1-phosphate, D-mannoheptose, sepharose, or sepharose-containing particles (i.e. latex, polystyrene or glass beads, microspheres or gels).
5. The method of claim 4, wherein the substrate comprises a desalting column.
6. The method of claim 3, wherein the antibody comprises mAb476.

~~7.~~ The method of claim ~~1~~, wherein the sample comprises urine.

~~8~~7. The method of claim 4, wherein the detection of the presence of an antibody-antigen complex is diagnostic for the presence of Ascomycetes fungi in the body.

98. A method for detecting fungal antigens in a urine sample, wherein the fungal antigens are associated with fungal sourced extracellular vesicles, comprising: processing the sample using a desalting column, using a detection assay to detect the presence of fungal sourced extracellular vesicles and to isolate the fungal sourced extracellular vesicles, processing the fungal sourced extracellular vesicles to expose or release the fungal antigens, and detecting the fungal antigens released from the fungal sourced extracellular vesicle.

~~10~~9. The method of claim 98, wherein the fungal sourced extracellular vesicles are bound to a protein.

~~11~~10. The method of claim ~~10~~9, wherein the protein comprises uromodulin.

~~12~~11. The method of claim 98, wherein processing the sample comprises passing the sample through a desalting column that co-precipitates uromodulin with fungal sourced extracellular vesicles.

~~13~~12. The method of claim ~~12~~11, wherein the desalting column contains intelectin-binding components.

~~14~~13. The method of claim ~~13~~12, wherein the intelectin-binding components comprises one or more of glycerol, 3-Keto-2-deoxyoctonic acid; D-glycerol-1-phosphate, D-mannoheptose, sepharose, sepharose-containing particles (i.e. latex, polystyrene or glass beads, microspheres or gels).

~~15~~14. The method of claim ~~9~~8, wherein detecting the fungal antigens released from the fungal sourced extracellular vesicle comprises contacting the ~~treated sample~~ that has been processed to

expose or release the fungal antigens with at least one antibody specific for at least one polysaccharide and/or glycoprotein comprising a galactofuranose residue in an effective amount to produce a detectable amount of antibody-polysaccharide complex; and detecting the presence of at least one antibody-polysaccharide complex, wherein the detection of the presence of at least one antibody-polysaccharide complex is diagnostic of the presence of a microbe ~~in the sample~~.

~~46~~15. The method of Claim ~~45~~14, wherein the antibody comprises mAb476.

~~47~~16. The method of claim ~~45~~14, wherein the biological sample comprises urine.

~~48~~17. The method of claim ~~45~~14, wherein the detection of the presence of an antibody-polysaccharide complex is diagnostic of the presence of Ascomycetes fungi ~~in the sample~~.

~~49~~18. The method of claim ~~48~~17, wherein fungal antigens are selected from the group consisting of: Aspergillus species, Aspergillus fumigatus, Aspergillus flavus, Aspergillus niger, Aspergillus nidulans, Aspergillus terreus, Aspergillus sydowi, Aspergillus flavatus, Aspergillus glaucus, Fusarium, Scedosporium, Histoplasma, Coccidioides, Paracoccidioides, Blastomyces, Pseudallescheria, Fusarium, Mucorales, Zygomycetes, and Pneumocystis.

~~20~~19. The method of claim 4, wherein the detection of the presence of an antibody-antigen complex is diagnostic of the presence of fungal antigens in the body, and wherein the fungal antigens are selected from the group consisting of: Aspergillus spp, Aspergillus fumigatus, Aspergillus flavus, Aspergillus niger, Aspergillus nidulans, Aspergillus terreus, Aspergillus sydowi, Aspergillus flavatus, Aspergillus glaucus, Fusarium, Scedosporium, Histoplasma, Coccidioides, Paracoccidioides, Blastomyces, Pseudallescheria, Fusarium, Trichophyton, Trichosporon, Microsporum, Epidermophyton, Scytalidium, Malassezia, Penicillium, and Pneumocystis.

~~24~~20. The method of claim 1, wherein the wherein the detection of the presence of an antibody-antigen complex is diagnostic for presence of a parasite in the body, and wherein the parasite is selected from the group consisting of: Leishmania species, Leishmania donovani, Plasmodium

species, Plasmodium vivax, Plasmodium ovale, Plasmodium falciparum, Plasmodium malariae, Plasmodium knowlesi, Trypanosoma species, Trypanosoma cruzi, Strongyloides species, Toxoplasma species, Toxoplasma gondii, and Helminths.

2221. The method of claim 1, wherein the detection of the presence of an antibody-antigen complex is diagnostic for presence of a bacteria in the body, and wherein the bacteria is selected from the group consisting of: Mycobacteria, Acidaminococcus, Acinetobacter, Acinetobacter Iwoffii, Aeromonas, Alcaligenes, Bacteroides, Bordetella, Branhamella, Brucella, Calymmatobacterium, Campylobacter, Cardiobacterium, Chromobacterium, Citrobacter, Citrobacter freundii, Cotiform group, Edwardsiella, Enterobacter, Enterobacter sakazaki, Enterobacter aerogenes, Enterobacter cloacae, Enterobacter agglomerans, Enterococcus, Enterococcus faecalis, Enterococcus faecium, Escherichia, Escherichia coli, Escherichia coli-0157, Flavobacterium, Francisella, Fusobacterium, Haemophilus, Hafnia alvei, Klebsiella, Klebsiella oxytoca, Klebsiella pneumoniae, Legionella, Moraxella, Morganella, Morganella morganii, Neisseria, Pasturella, Plesiomonas, Proteus, Providencia, Proteus mirabilis, Pseudomonas, Pseudomonas aeruginosa, Salmonella, Salmonella typhimurium, Serratia, Serratia marcescens, Shigella, Shigella flexneri, Streptobacillus, Veillonella, Vibrio, Vibrio cholera, Yersinia, Yersinia enterocolitica, Xanthomonas maltophilia, Staphylococcus, Staphylococcus albus, Staphylococcus epidermiditis, Staphylococcus lugdenensis, Staphylococcus aureus, Streptococcus, Streptococcus pneumoniae, Streptococcus dysgalactiae, Micrococcus, Peptococcus, Peptostreptococcus, Bacillus, Bacillus cereus, Clostridium, Lactobacillus, Listeria, Listeria monocytogenes, Erysipelothrix, Propionibacterium, Eubacterium, and Corynebacterium.

22. The method of claim 1, wherein the at least one antibody specific for at least one antigen, polysaccharide or glycoprotein comprises a galactofuranose residue.

23. The method of claim 21, wherein the Mycobacteria is Mycobacterium tuberculosis.