What is claimed is:

1. A method for analyzing a urine sample, comprising the steps of:

preparing a measurement sample by mixing the urine sample, a reagent containing a surfactant, and a reagent containing a fluorescent dye for staining casts and erythrocytes contained in the measurement sample;

obtaining optical information by irradiating urinary particles contained in the measurement sample with light; and

detecting at least casts and erythrocytes as urinary particles contained in the measurement sample, based on the obtained optical information,

wherein the surfactant is at least one selected from a quaternary ammonium salt type surfactant and a nonionic surfactant, and

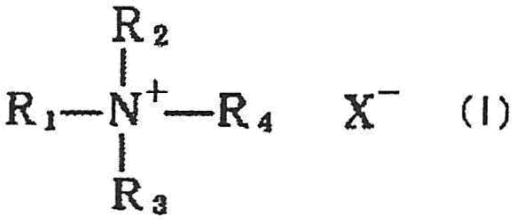
wherein a concentration of the surfactant in the measurement sample is more than or equal to 3 mg/L and less than or equal to 30 mg/L.

2. The method for analyzing the urine sample according to claim 1, wherein the concentration of the surfactant in the measurement sample is more than or equal to 4 mg/L and less than or equal to 22 mg/L.

3. The method for analyzing the urine sample according to claim 1 or 2, wherein the nonionic surfactant is a polyoxyethylene-based nonionic surfactant.

4. The method for analyzing the urine sample according to any preceding claim, wherein the quaternary ammonium salt type surfactant is

a surfactant having 4 to 38 carbon atoms in total represented by the following formula (I):



wherein R_1 is an alkyl or alkenyl group having 1 to 18 carbon atoms; R_2 and R_3 are the same or different from each other and are respectively an alkyl or alkenyl group having 1 to 4 carbon atoms; R_4 is an alkyl or alkenyl group having 1 to 12 carbon atoms, or a benzyl group; and X^- is a halogen ion or a hydroxyl ion.

5. The method for analyzing the urine sample according to claim 4, wherein each of R_2, R_3 and R_4 defined in the formula (I) is a methyl group.

6. The method for analyzing the urine sample according to claim 4 or 5, wherein X^- defined in the formula (I) is the halogen ion and at least one selected from a bromide ion, a chloride ion and an iodide ion.

7. The method for analyzing the urine sample according to any preceding claim, wherein the quaternary ammonium salt type surfactant is at least one selected from dodecyltrimethylammonium bromide, octyltrimethylammonium bromide, tetradecyltrimethylammonium bromide, dodecyltrimethylammonium chloride, octyltrimethylammonium chloride and tetradecyltrimethylammonium chloride.

8. The method for analyzing the urine sample according to claim 3, wherein the polyoxyethylene-based nonionic surfactant is polyoxyethylene alkyl ether.

9. The method for analyzing the urine sample according to any preceding claim, wherein the fluorescent dye for staining the casts and the erythrocytes is a cyanine-based fluorescent dye.

10. The method for analyzing the urine sample according to any preceding claim, wherein the optical information comprises at least scattered light information.

11. The method for analyzing the urine sample according to any preceding claim, wherein the reagent containing the surfactant further comprises a chelating agent.

12. The method for analyzing the urine sample according to claim 11, wherein the chelating agent is ethylenediaminetetraacetate (EDTA salt).