REPLACEMENT SHEET
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DETECTION AND QUANTIFICATION OF ONE OR MORE TARGET ANALYTES IN A SAMPLE USING SPATIALLY LOCALIZED ANALYTE REPRODUCTION

ABSTRACT OF THE DISCLOSURE

The presence or absence of one or more target microbial analytes in a substance, such as a biological or environmental substance, is assayed by inoculating a growth medium with a sample of the substance. The medium may be combined with a labeled analyte-specific material (LASM) which can migrate through the substrate and which is homogeneously distributed throughout the medium. The LASM may be premixed with the medium, or may be added to the medium after inoculation with the substance. The nature of the medium is such that it will support target analyte reproduction so as to form target analyte colonies in or on the medium, and it will not allow the target analyte colonies to migrate on or within the medium. After the sample to be assayed is added to the medium, growth of the target analyte colonies in the sample will bind increasing quantities of the LASM, thereby creating localized intensely labeled areas in the medium which can be visually or photometrically detected. As the target analyte colonies grow on or in the medium they attract increasing quantities of the LASM which diffuses to the colonies through the medium causing the local target analyte colonies to become intensely labeled, which renders the colonies readily detectable. Each of the intensely labeled target analyte colonies in the medium may also be surrounded by areas of lower intensity due to local depletion of the LASM in the regions of colony growth . The number of intensely labeled target analyte colonies in the medium will be proportional to the concentration of the target analyte present in the sample. In the event that the target analyte is absent from the sample, then there will be no localized labeled microbe colonies in the medium.

Figure 3