NANOPARTICULATE TITANIUM DIOXIDE NANOMATERIAL MODIFIED WITH FUNCTIONAL GROUPS AND WITH CITRIC EXTRACTS ADSORBED ON THE SURFACE, FOR THE REMOVAL OF A WIDE RANGE OF MICROORGANISMS

ABSTRACT

The present invention relates to the conjugate of a titanium dioxide nanomaterial and nanoparticulate (1-100 nm) herbal and/or fruit extracts, synthesized by means of impregnation, using titanium dioxide as support, to which are adsorbed organic functional groups, inorganic radicals and plant extracts that confer thereon the property of being an anti-microbial agent with a high disinfectant and antiseptic power, removing bacteria, fungi, mycobacteria, spores, mycobacteria, protozoa and viruses.

This invention is a solid nanomaterial in liquid suspension. Said material is prepared by means of impregnation to disperse the functional groups and the extract particles, with control of the temperature to stabilize the interactions within the network of the support.

The virucidal, bactericidal, fungicidal, mycobactericidal, mycoplasmicidal, antiprotozoal and sporicidal activity of the nanoparticulate biomaterial

depends on the particle size of the support oxide, the functionalization and the dispersion of extracts adsorbed on the surface. The functional groups may include hydroxyl, carboxyl, amine, sulfate, phosphate, and the supports may be titanium dioxide, silica, zirconia, zinc oxide, alumina and other metal oxides, without being restricted to these functional groups, extracts or supports.

No suitable figure