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13/859,037 9 April 2013 (09.04.2013) US(71) Applicants: **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, New York 10504 (US). **AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH** [SG/SG]; 1 Fusionopolis Way, #20-10 Connexis North Tower, Singapore 138632 (SG).(72) Inventors: **COADY, Daniel Joseph**; 650 Harry Road, Almaden Research Center, San Jose, California 95120-6099 (US). **DIPIETRO, Richard Anthony**; 650 Harry Road, Almaden Research Center, San Jose, California 95120-6099 (US). **ENGLER, Amanda Catherine**; 650 Harry Road, Almaden Research Center, San Jose, California 95120-6099 (US). **HEDRICK, James Lupton**; 650 Harry Road, Almaden Research Center, San Jose, California 95120-6099 (US). **CHIN, Willy**; 31 Biopolis Way, 138669 Singapore (SG). **LEE, Ashlynn L. Z.**; 31 Biopolis Way, 138669 Singapore (SG). **NG, Victor W. L.**; 31 BiopolisWay, 138669 Singapore (SG). **ONG, Zhan-Yuin**; 31 Biopolis Way, 138669 Singapore (SG). **YANG, Yi Yan**; 31 Biopolis Way, 138669 Singapore (SG).(74) Agent: **SULLIVAN, Sean F.**; Cantor Colburn LLP, 20 Church St., 22nd Floor, Hartford, Connecticut 06103-3207 (US).(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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(54) Title: ANTIMICROBIAL CATIONIC POLYCARBONATES

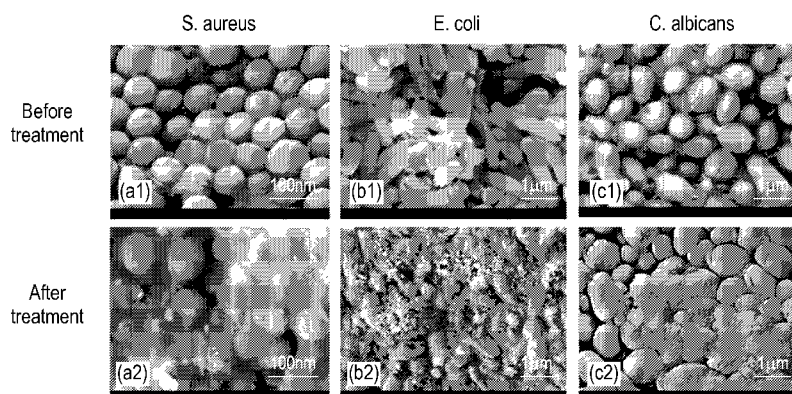


FIG. 11

(57) Abstract: Antimicrobial cationic polymers having one or two cationic polycarbonate chains were prepared by organocatalyzed ring opening polymerization. One antimicrobial cationic polymer has a polymer chain consisting essentially of cationic carbonate repeat units linked to one or two end groups. The end groups can comprise a covalently bound form of biologically active compound such as cholesterol. Other antimicrobial cationic polymers have a random copolycarbonate chain comprising a minor mole fraction of hydrophobic repeat units bearing a covalently bound form of a vitamin E and/or vitamin D2. The cationic polymers exhibit high activity and selectivity against Gram-negative and Gram-positive microbes and fungi.

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