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(71) **Applicants** *(for all designated States except US)*: **PRESIDENT AND FELLOWS OF HARVARD COLLEGE** [US/US]; 17 Quincy Street, Cambridge, Massachusetts 02138 (US). **WATTERS, Alexander** [US/US]; 343 Washington Street, Melrose, Massachusetts 02176 (US).

(72) **Inventors; and**

(75) **Inventors/Applicants** *(for US only)*: **INGBER, Donald E.** [US/US]; 162 West Canton Street, Boston, Massachusetts 02118 (US). **SUPER, Michael** [GB/US]; 354 Concord Avenue, Lexington, Massachusetts 02421 (US). **WAY, Jeffrey Charles** [US/US]; 108 Fayerweather Street, Cambridge, Massachusetts 02138 (US). **CARTWRIGHT, Mark J.** [CA/US]; 37 Princess Road, West Newton, Massachusetts 02465 (US). **BERTHET, Julia B.** [US/US]; 15 Parkman Street, Brookline, Massachusetts 02446 (US). **SUPER, Dinah R.** [GB/US]; 354 Concord Avenue, Lexington, Massachusetts 02421 (US). **ROTTMAN, Martin M.** [US/US]; 32 Vassal Lane, Cambridge, Massachusetts 02138 (US).

(74) **Agents**: **RESNICK, David S.** et al.; NIXON PEABODY, LLP, 100 Summer Street, Boston, Massachusetts 02110 (US).

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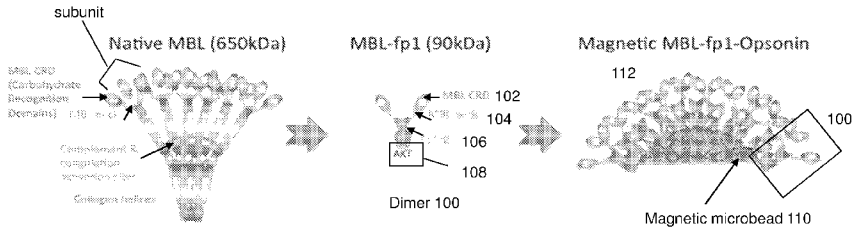
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(54) **Title**: ENGINEERED MICROBE-TARGETING MOLECULES AND USES THEREOF



(57) **Abstract**: Described herein are engineered microbe-targeting or microbe-binding molecules, kits comprising the same and uses thereof. Some particular embodiments of the microbe-targeting or microbe-binding molecules comprise a carbohydrate recognition domain of mannose-binding lectin, or a fragment thereof, linked to a portion of a Fc region. In some embodiments, the microbe-targeting molecules or microbe-binding molecules can be conjugated to a substrate, e.g., a magnetic microbead, forming a microbe-targeting substrate (e.g., a microbe-targeting magnetic microbead). Such microbe-targeting molecules and/or substrates and the kits comprising the same can bind and/or capture of a microbe and/or microbial matter thereof, and can thus be used in various applications, e.g., diagnosis and/or treatment of an infection caused by microbes such as sepsis in a subject or any environmental surface. Microbe-targeting molecules and/or substrates can be regenerated after use by washing with a low pH buffer or buffer in which calcium is insoluble.

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