ABSTRACT

ENGINEERED MICROBE-TARGETING MOLECULES AND USES THEREOF

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.

Figure 1C