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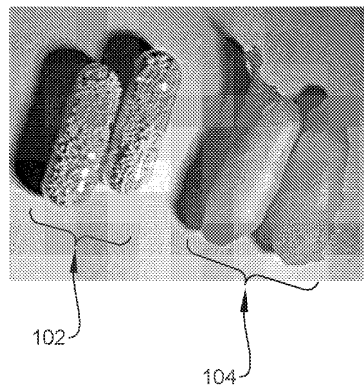
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(54) **Title:** COMPOSITIONS, SYSTEMS, AND METHODS OF MAKING AND USING ENCAPSULATED LYOPHILISED MICROSPHERES



Blue 102: OTS Gelatin capsule
filled with microspheres

Yellow 104: OTS Gelatin capsule
filled with microspheres quick dipped
in hot paraffin wax

FIG. 4A

(57) **Abstract:** The present disclosure relates to a composition comprising a shell surrounding a core, wherein the core comprises one or more lyophilised microspheres. Also described herein is a method comprising providing one or more lyophilised microspheres; and coating the one or more lyophilised microspheres with a shell under conditions effective to encapsulate the one or more lyophilised microspheres. The present disclosure further relates to a system comprising one or more composition as described herein, and one or more lyophilised cake, wherein the one or more composition and the one or more lyophilised cake are combined under conditions effective to form a rehydration system. Also described herein is a method of controlling release of one or more encapsulated microspheres comprising providing a composition as described herein and mixing the composition with a rehydration solution under a first condition effective to control release of one or more lyophilised microspheres from the composition.

[Continued on next page]

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