

PLALETET-RICH PLASMA (PRP) COMPOSITION, SYSTEM AND METHOD OF PREPARING THE COMPOSITION FOR OSTEOARTHRITIS TREATMENT

Abstract

The present invention describes a platelet-rich plasma (PRP) composition, system and method of preparing a PRP composition for osteoarthritis treatment. More particularly, the PRP composition comprises a core comprising platelet-rich plasma and an activator compound comprising calcium chloride, wherein bioactive molecules are released in the core upon activation of platelets in the plasma; and an alginate-based wall surrounding the core to prevent haemolysis. Further, the PRP composition is prepared by separation of platelet-rich plasma from a whole blood, followed by activating platelets therein using photochromatic light, subsequently enriching it with the calcium chloride to stimulate release of bioactive molecules from the platelets, and then encapsulating them in alginate nanoparticles to prevent haemolysis. By doing so, a stable quality of PRP can be prepared and being used for osteoarthritis treatment.

FIG.1 for publication.