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Laponite-Chamomile (*Matricaria chamomilla* L.) gels with controlled release of oxygen for applications in skin wounds

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Chamomile (*Matricaria chamomilla* L.) is a traditional medicinal plant distributed widely used to treat different kinds of diseases. It also possesses anti-infective, anti-inflammatory, antioxidant and antiallergic properties. Laponite is a synthetic nanosilicate that exhibits a unique shape and surface charge suitable for drug delivery applications. It can be useful as an alternative to release oxygen in a sustainable and prolonged manner. Herein we show for the first time the production of hydrogels based on Laponite and Chamomile (*Matricaria chamomilla* L.) with controlled release of oxygen for application in infected skin wounds. The optical sensor measured the oxygen concentration on the gels according to the different concentration of calcium peroxide. The swelling ratio of oxygen-generating gels and their degradation was also investigated. The bactericidal activity of was investigated through the size of the inhibitory halo. Laponite acted as an efficient barrier to oxygen and showed antimicrobial activity. The gels produced were a potential candidate for the treatment of infections and healing of skin wounds.