# Details view

Knowhow offering

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| Title | Polysaccharide based nanoemulsion for curcumin delivery |
| Knowhow is available for | A method to use naturally occuring exopolysaccharide as emulsifiers for stabilization/entrapment of valuable bioactive molecules such as curcumin. |
| Summary | Natural polysaccharides, namely. levan, fucoidan, guar gum, alginate and κ-carrageenan were used for entrapment of curcumin in two different carrier oils-olive and castor oil. Curcumin was dissolved in either olive or castor oil by stirring the mixture. The oil-in-water macroemulsion was synthesized by mixing the aqueous solution of polysaccharides with oils containing curcumin in the ratio of 1:2. The obtained macroemulsions were ultrasonicated to synthesize the nanoemulsions. The nanoemulsions were characterized using dynamic light scattering, TEM, and rheological analysis. The curcumin loaded nanoemulsions were then evaluated for encapsulation efficiency. |
| Advantages | First and novel use of exopolysaccharides to prepare nanoemulsions in the absence of a co-emulsifier. The polysaccharides used are biologically safe, biodegradable and have shown tremendous stability under wide range of physical conditions. Polysaccharides did not mask the anti-oxidant activity of curcumin, and in some cases, a synergistic increase in anti-oxidant activity was observed. Emulsions exhibited better encapsulation efficiency and release kinetics than the nanoemulsion prepared using a synthetic surfactant such as Tween. |

Knowhow is listed under following categories

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| Knowhow from | |
| Scientific/ engineering subject areas | **Life sciences/ biosciences & engineering** ; Chemical sciences & engineering |
| Investor interest categories | **Biotechnology/ Biomedical/ Health Technologies** ; Materials Technology including Nanotechnology |
| Industries | **Pharmaceuticals, Bulk Drugs, Formulations** ; |