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Highlights

- Pickering emulsion was created using protein nanogel particles (WPN) of ~80 nm size.
- Encapsulation of curcumin (CUR) did not affect droplet size of Pickering emulsions.
- Binding constant between CUR and interfacial WPN was higher at pH 3.0 than pH 7.0.
- Binding of CUR with interfacial WPN at pH 7.0 was influenced by presence of ions.
- Electrostatic and hydrophobic interactions of CUR with WPN impacted retention.