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(57) Abstract :
POLY-HERBAL BIO ADHESIVE SUSTAINED-RELEASE ORAL GEL FOR DENTAL EROSION. A poly-herbal bio adhesive sustained-release oral gel composition for protecting enamel and dentin against dental erosion is disclosed. The composition comprises crude extracts of betel leaf (Piper betle) and green tea (Camellia sinensis), calcium carbonate, poly(methyl vinyl ether/maleic acid) copolymer, polyvinylpyrrolidone, carboxymethylcellulose and Carbopol® 934. The polymers collectively form a hydrated bioadhesive and film-forming matrix that retains the active components on a tooth surface and permits sustained release thereof. Calcium carbonate neutralizes acidic conditions and supplies calcium ions, while the herbal extracts protect the dentinal organic matrix. A process for preparing the composition comprises preparing the crude extracts and a calcium carbonate dispersion, hydrating the polymers to form a viscous polymeric matrix, incorporating the crude extracts and calcium carbonate dispersion into the matrix, mixing to obtain a uniform bubble-free gel, adjusting the pH to approximately 6.5–7.0, and filling the gel into sterile collapsible tubes or airtight containers. [FIG. 1]

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