Liraglutide (LIRA), a GLP-1 receptor agonist, provides effective glycemic control and weight loss. However, its short half-life of 13 hours and subcutaneous-only formulation reduce patient compliance, limiting its suitability for long-term treatment. To address these limitations, an oral formulation was developed to enhance LIRA bioavailability and improve patient adherence. Biodegradable and biocompatible zein, a corn-derived storage protein, was used to form the nanoparticle (NP) core, while Eudragit RS100 (RS) was incorporated to provide sustained drug release. The NP surface was initially coated with positively charged chitosan (CS) to promote interaction with the intestinal mucus layer and facilitate absorption. Subsequently, two types of hyaluronic acid were applied as secondary coatings to investigate their effects on CD44 receptor binding affinity and intestinal epithelial absorption efficiency. The uncoated formulation is referred to as ZNP. The CS single-coated formulation is referred to as CNP, while the dual-coated formulations with hyaluronic acid (HA) and oligo hyaluronic acid (OHA) are referred to as CNPH and CNPO, respectively.