

Phytochemical Targeting of the Incretin System: Evaluating Plants that Act as Natural GLP-1 Receptor Agonists or DPP-4 Inhibitors

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Abstract: *Currently, there is no known cure for diabetes. Different pharmaceutical therapies have been approved for the management of type 2 diabetes mellitus (T2DM), some are in clinical trials and they have been classified according to their route or mechanism of action. Insulin types, sulfonylureas, biguanides, alpha-glucosidase inhibitors, thiazolidinediones, meglitinides, sodium-glucose cotransporter type 2 inhibitors, and incretin-dependent therapies (glucagon-like peptide-1 receptor agonists: GLP-1R, and dipeptidyl peptidase 4 inhibitors: DPP-4). Although some of the currently available drugs are effective in the management of T2DM, the side effects resulting from prolonged use of these drugs remain a serious challenge. GLP-1R agonists are currently the preferred medications to include when oral metformin alone is insufficient to manage T2DM. Medicinal plants now play prominent roles in the management of various diseases globally because they are readily available and affordable as well as having limited and transient side effects. Recently, studies have reported the ability of phytochemicals to activate glucagon-like peptide-1 receptor (GLP-1R), acting as an agonist just like the GLP-1R agonist with beneficial effects in the management of T2DM. Consequently, we propose that careful exploration of phytochemicals for the development of novel therapeutic candidates as GLP-1R agonists will be a welcome breakthrough in the management of T2DM and the co-morbidities associated with T2DM.*

Keywords: diabetes mellitus; diabetes complications; glucagon-like peptide-1 receptor agonist; phytochemicals; newer drugs

