

Brand Name: Bydureon

Generic: exenatide

Type: small molecule

Year Accepted/Phase: 2012

Mechanism:

Exenatide is a GLP-1 receptor agonist that mimics the incretin hormone GLP-1, which enhances glucose-dependent insulin secretion, suppresses inappropriate glucagon secretion, slows gastric emptying, and reduces food intake, thereby improving glycemic control.

Chemical Structure: N/A

Indication:

Bydureon is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus.

Clinical trials:

DURATION-1 Trial (Phase III)

Pubmed: <https://pubmed.ncbi.nlm.nih.gov/20215461/>

Purpose: Evaluate the efficacy and safety of exenatide once weekly (Bydureon) compared to exenatide twice daily (Byetta) in patients with type 2 diabetes.

Dates: Conducted from 2006 to 2008.

Results: The DURATION-1 trial demonstrated that Bydureon provided significant improvements in glycemic control (HbA1c reduction) with fewer gastrointestinal side effects compared to Byetta. The trial also showed that Bydureon was associated with weight loss in patients.

Impact: These results supported the development and subsequent approval of Bydureon for once-weekly administration.

DURATION-2 Trial (Phase III)

Pubmed: <https://pubmed.ncbi.nlm.nih.gov/21434995/>

Purpose: Compare the efficacy and safety of Bydureon to sitagliptin and pioglitazone in patients with type 2 diabetes inadequately controlled on metformin.

Dates: Conducted from 2008 to 2010.

Results: The DURATION-2 trial demonstrated that Bydureon significantly reduced HbA1c levels compared to both sitagliptin and pioglitazone, with additional benefits of weight loss and low risk of hypoglycemia.

Impact: These results provided further evidence of the efficacy and safety of Bydureon as a treatment for type 2 diabetes.

DURATION-5 Trial (Phase III)

Pubmed: <https://pubmed.ncbi.nlm.nih.gov/21307137/>

Purpose: Compare the efficacy and safety of Bydureon to exenatide twice daily in patients with type 2 diabetes.

Dates: Conducted from 2009 to 2011.

Results: The DURATION-5 trial demonstrated that Bydureon was superior to exenatide twice daily in reducing HbA1c levels, with similar safety profiles between the two formulations.

Impact: These results reinforced the benefits of the once-weekly formulation of exenatide.