NO: 4 of Table 1, the GLP-2 derivative and ALD(2) PEG were reacted at a molar ratio of 1:5 to 1:20 with a GLP-2 derivative concentration of 5 mg/mL to 10 mg/mL at a temperature of 2°C to 8°C for 4 to 16 hours. At this time, the reaction was conducted in 20 mM HEPES at pH 7.5, in ethanol with addition of 20 mM sodium cyanoborohydride as a reducing agent. The reaction solution was purified with a Source 15S column (GE, USA) using a buffer solution containing sodium citrate (pH 2.0) and ethanol and a potassium chloride concentration gradient to thereby purify the mono-PEGylated GLP-2 derivative.

Subsequently, the purified mono-PEGylated GLP-2 derivative and the immunoglobulin Fc fragment of SEQ ID NO: 32 were reacted at a molar ratio of 1:2 to 1:6 with a total protein concentration of 30 mg/mL to 35 mg/mL at a temperature of 2°C to 8°C for 12 to 20 hours. At this time, the reaction solution contained a 100 mM calcium phosphate buffer (pH 6.0) and isopropanol with addition of 20 mM sodium cyanoborohydride as a reducing agent.

Upon completion of the reaction, the reaction solution was purified with a Source15Q column (GE, USA) using a bis-Tris buffer (pH 6.5) and a sodium chloride concentration gradient and with a Source 15ISO (GE, USA) using ammonium sulfate and a sodium citrate concentration gradient (pH 5.0 to 5.2) to thereby purify a long-acting conjugate of the GLP-2 derivative that is a conjugate in which the GLP-2 derivative is linked to the immunoglobulin Fc fragment via a covalent bond by the polyethyleneglycol linker.

Example 2: Confirmation of Increased Small Intestine Mass in Rat Model in which Gastrointestinal Mucositis is Induced by Chemotherapy by Administering GLP-2 Derivative Long-acting Conjugate

In order to measure effects of the GLP-2 derivative long-acting conjugate prepared in Example 1 on ameliorating the small intestine *in vivo*, rats in which gastrointestinal mucositis was induced by chemotherapy (Docetaxel + Cyclophosphamide, TC) were used.

Specifically, 7-week-old male rats (SD rat) were divided into groups (3 rats per each group): a normal control (not treated with chemotherapy, G1, (Sham~~Harm~~) Vehicle), a control having gastrointestinal mucositis induced by chemotherapy (G2, (TC) vehicle), and a group in which gastrointestinal mucositis was induced by