INJECTABLE SOLUTION WITH A PH OF 7 COMPRISING AT LEAST ONE BASAL INSULIN WITH A PI OF BETWEEN 5.8 AND 8.5 AND A CO-POLYAMINOACID BEARING CARBOXYLATE CHARGES AND HYDROPHOBIC RADICALS

[0001] The invention relates to insulin injection therapies for treating diabetes.

[0002] The invention relates to physically stable compositions in the form of an injectable aqueous solution, wherein the pH is comprised from 6.0 to 8.0, comprising at least one basal insulin which isoelectric point (pI) is comprised from 5.8 to 8.5 and a co-polyamino acid bearing carboxylate charges and hydrophobic radicals.

[0003] Insulin therapy, or insulin injection diabetes therapy, has seen remarkable progress in recent years due to notably the development of novel insulins offering superior patient blood glucose correction compared to human insulin and which allow better simulation of the physiological activity of the pancreas.

[0004] When type II diabetes is diagnosed in a patient, a gradual treatment is instituted. The patient firstly takes oral antidiabetic drugs (OADs) such as Metformin. When OADs alone are no longer sufficient to regulate the blood glucose level, a treatment modification must be made and, based on patient specificities, various treatment combinations may be put in place. The patient may for example have a treatment based on a basal insulin such as insulin glargine or insulin detemir in addition to OADs, and then subsequently according to the progression of the condition a treatment based on basal insulin and prandial insulin.

[0005] Moreover, at the present time, to ensure the transition from OAD treatments, if said treatments are no longer capable of controlling the blood glucose level, to a basal insulin/prandial insulin treatment, the injection of GLP-1 RA analogs is recommended.