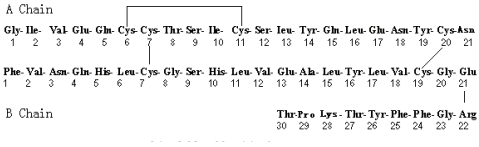
Prolog®
Insulin Lispro

Active substance: Insulin Lispro
Chemical name: 28B-L-Lys-29B-L-Pro-human insulin
Structure:



Molecular weight: 58088
Excipients: Zinc oxide, m-cresol, glycerol, disodium hydrogen phosphate, sodium hydroxide, hydrochloric acid, water for injection

Description
Clear colorless solution filled in colorless and transparent vial or cartridge.

Indications
Diabetes mellitus

Strengths
10mL: 1,000 units/vial
3mL: 300 units/cartridge

Dosage and Administration
Dosage of Insulin Lispro Injection is determined individually by the doctor.
For Insulin Lispro Injection is fast acting injection, it should be administered near to meal times (within 15 minutes before a meal) instead of a longer time (30-45minutes)before a meal for regular human insulin. Sometimes, Insulin Lispro Injection can be administered in combination with long acting insulin on the doctor's advice.
Insulin Lispro Injection should be administered subcutaneously and the injection sites should be chosen alternately. The same injection site cannot be injected more than one time within one month. Injection technique should be correctly introduced to patients to avoid vascular injury when injecting.
The dosage of Insulin Lispro may be reduced for patients with hepatic or renal insufficiency.
Please recover its temperature as room temperature before use and follow the step:
1. Inspect the appearance of Insulin Lispro Injection. It should look clear and colorless. Do not use if it is cloudy, thickened, or slightly colored or if solid particles are visible.
2. If using a new vial, flip off the plastic protective cap, but do not remove the stopper. Wipe the top of the vial and stopper with 75% alcohol swab before use.
3. Draw air into the syringe equal to your insulin dose. Put the needle through rubber top of the vial and inject the air into the bottle.
4. Turn the vial and syringe upside down. Hold it and syringe firmly in one hand.
5. Making sure the tip of the needle is in the insulin solution, withdraw the correct dose of insulin injection into the syringe.
6. Before removing the needle from the bottle, check your syringe for air bubbles which reduce the amount of insulin in it. If bubbles are present, hold the syringe straight up and tap its side until the bubbles float to the top. Push them out with the plunger and withdraw the correct dose.
7. The injection site should be sanitized before subcutaneous administration. The injection area is usually soft skin such as abdomen, thigh, upper arm. Injection sites must be different from one injection to the next.
8. Pinch the skin, stick the needle into injection site, and release the skin. Slowly push in the plunger of the syringe all the way, Leave the needle in the skin for about several seconds to make sure you have injected all the insulin. Pull the needle straight out and gently press where you injected for several seconds with swab. Do not rub the area to avoid subcutaneous tissue injury or injection effusion.

Adverse Reactions
Commonly the side effects are relevant to Insulin, including:
- Allergy to insulin: During insulin therapy, local allergic action may occur at injection site including redness, pain, itching, hives, swelling, Lipodystrophy (thickening or pitting of the skin at the injection site) and inflammation. These reactions are always mild and temporary, usually clears up during continuous therapy. In some cases it may not be caused by insulin but resulted from other reasons such as skin irritation to disinfectants, improper injection operations etc. Systemic allergy may uncommonly occur. If occurred, it may lead to systemic rash, short of breath, pant, hypotension, pulse speeding, hyperhidrosis or even may threaten your life.
- Edema (e.g. swelling in arms, ankles; fluid retention) may occur, particularly at the start of insulin therapy or during a change in therapy to improve control of your blood glucose.
- Hypoglycemia: Hypoglycemia is a normal side effect to diabetes patients. It would be taken place due to improperly administrating insulin type, too much dosage and/or unreasonable dietetic control along with exercise. Hypoglycemia may result in impediment of the patients' ability to drive or operate machinery. Severe hypoglycemia may cause loss of consciousness or even death.

Contraindications
This product can't be used when hypoglycemia incident happened.
Insulin lispro is contraindicated to patients hypersensitive to insulin lispro or the other excipients.

Precautions
1. This product should be used with caution for athletes.
2. Insulin Lispro's specific structure leads to more rapid onset and shorter duration compared with regular insulin. The dosage may be adjusted when patients change from other insulin to Insulin Lispro.
Hypoglycemia is one of the most frequent side effects to diabetes patients using insulin, the same is true to insulin Lispro. Early symptoms of hypoglycemia by using Insulin Lispro is different from that long term suffering of diabetes or diabetes strengthening control cases, or they rarely occur the same symptoms.
Any change must be under medical supervision, when patient changed to use the other insulin, such as other insulin strength, brand, type, species (animal insulin, human insulin, human insulin analogue) and/or manufacturing process may result in the need for a change in dosage.
3. The insulin dosage for patients in a disease period or in restlessness occasion should be added.
4. The insulin dosage should be adjusted for patient with improvement of physical performance or change of diets.
5. The insulin dosage should be reduced for patient with injury of liver or kidney.
6. Insulin Lispro is a peptide hormone as other insulin.

Pregnancy and lactation
At present there is no system research result of pregnancy for this product.
The blood glucose level of diabetic patient with gestation should be carefully monitored and the dosage should be adjusted accordingly to keep good metabolic control in whole pregnancy.
Insulin dosage may be decreased during the first three months of pregnancy, and then it should be usually added during the second and third three months.
To diabetic patients in pregnancy or plan to be pregnant, the use of insulin should follow the doctor's advice. To patients in lactation, they should adjust the dosage of insulin or diet, or adjust both. It's not clear whether Insulin Lispro is discharged by way of human milk, while many medicines, including human insulin, can be discharged by milk.

Pediatric Use
The safety and efficacy of insulin lispro in pediatric diabetics (less than 12 ages) need to be evaluated.

Geriatric Use
No specific instructions. Please refer to the part of [Dosage and Administration]

Driving and using machines
Ability to concentrate and react may be reduced if you have hypoglycaemia. To follow the doctor's advice about driving a car or operating machinery in case of :
• frequent episodes of hypoglycaemia
• reduced or absent warning signs of hypoglycaemia

Drug Interactions
Many drugs affect glucose metabolism, insulin dosage may be properly adjusted by closely monitoring blood glucose.
The insulin dosage of diabetic patients may be increased, who are taking blood-glucose-elevating substances or insulin antagonist such as oral contraceptives, corticosteroids, thyroid hormones substitute.
The insulin dosage of diabetic patients may be reduced, who are taking blood-glucose-lowering substances or insulin sensitizer such as oral anti-diabetes products, salicylates (such as Aspirin), sulfonamide antibiotics or some antidepressant (MAO inhibitor).
Research demonstrates that applying Insulin Lispro Injection to diabetic patients of type II who have been given utmost dosage of oral anti-diabetes products of sulfonylureas can evidently decrease the level of HbA1c.
Please advice your doctor when requiring combination treatment of Insulin Lispro Injection with any other medicines.

Over Dosage
Over dosage of Insulin Lispro injection may lead to hypoglycemia incident, together with tireness, confusion of consciousness, palpitation, hyperhidrosis, emesis and headache. It's mainly resulted from exceeded dosage of Insulin Lispro compared with patients' intake of food and/or energy consumption.
Mild episodes of hypoglycemia can usually be relieved with oral glucose. Adjustments in drug dosage, meal patterns, or exercise may be needed.
More severe episodes with coma, seizure or neurologic impairment may be treated with intramuscular/subcutaneous glucagon or concentrated intravenous glucose. After apparent clinical recovery from hypoglycemia, continued observation and additional carbohydrate intake may be necessary to avoid recurrence of hypoglycemia.

Pharmacology and Toxicology
Research demonstrates that equal number of moles of Insulin Lispro has equal effects with human insulin.
The main physiology effect of Insulin is to promote constructive metabolism and to adjust the concentration of blood glucose.
Insulin is able to regulate carbohydrate metabolism, promote the absorption and utilization of glucose in liver, muscle as well as fatty tissue, expedite the conversion of glucose to glycogen which could be stored in the muscle and liver, restrict the gluconeogenesis, and thus to reduce the blood glucose. Compared with regular insulin, rapid onset and short duration still exist among the patients with injury of liver and kidney.

Pharmacokinetics
According to reports in the literature, Insulin Lispro Injection shows a more rapid onset, earlier time to peak and shorter duration in comparison with regular insulin. Its fast acting property (within 15 minutes after administration) is directly related to its rapid absorption. So it should be administered near to meal times (within 15 minutes before a meal) instead of a longer time (30-45minutes) before a meal for regular human insulin.
Absorption rate as well as onset time of Lispro Insulin are affected by injection site and other variables.
After injection of Insulin Lispro, it could be absorbed rapidly and the plasma concentration reaches the peak from 30 minutes to 70 minutes after administration. Insulin Lispro has a more rapid onset, earlier time to peak and shorter duration (about 2-5 hours) properties than regular human insulin.
Research demonstrates that after administration to patients with hepatic or renal insufficiency, the absorption is faster than that using regular human insulin and body insulin level is increased.

Storage
Unopened vials and cartridges should be stored at 2-8°C. It should not be stored in the freezer.
If storing at 2-8°C is not possible, the vial or cartridge of insulin injection that you are currently using can be kept unrefrigerated for up to 28 days far away from heat and light, as long as it is kept as cool as possible (below 25°C). Please put it back to its box after use.

Packages
1.Vials, brominated isobutylene isoprene (BII) stopper, 1vial/box;
2.Cartridges, composite aluminium cap, BII bottom stopper, 1 cartridge/box

Shelf-life
24 months

This is a medicament
- A medicament is a product which affects your health, and its consumption contrary to instructions is dangerous for you
- Follow strictly the doctor's prescription, the method of use, and the instructions of the pharmacist who sold the medicament
- The doctor and the pharmacist are experts in medicine, its benefits and risks
- Do not by yourself interrupt the period of treatment prescribed for you
- Do not repeat the same prescription without consulting your doctor
- Medicament: keep out of reach of children

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