

## **SUMMARY OF PRODUCT CHARACTERISTICS**

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### 1. NAME OF THE MEDICINAL PRODUCT

Scilin R, 100 IU/ml, solution for injection

### 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

1 ml of Scilin R solution contains 100 IU of soluble human insulin (*Insulinum humanum*) obtained by *E. coli* DNA recombination.

The vial contains 10 ml of solution, corresponding to 1000 IU of soluble insulin.

Scilin R contains human insulin only. The products are 100% consistent with the amino acid composition of the insulin produced by humans – unlike animal insulin or other insulin analogues obtained by genetic recombination whose compositions differ from human insulin to various extents.

For the full list of excipients, see section 6.1.

### 3. PHARMACEUTICAL FORM

Scilin R: solution for injection in a vial.

Scilin R is a sterile, transparent, colourless aqueous solution of human insulin, adjusted to the pH range of 7-7.6.

### 4. CLINICAL PARTICULARS

#### 4.1. Therapeutic indications

Diabetes treatment for patients requiring insulin therapy in order to maintain proper glucose metabolism.

Gestational diabetes treatment.

#### 4.2. Posology and method of administration

##### Posology

Dosage is determined by the doctor on the basis of patient's insulin requirement. In type 2 diabetes the average initial dose is 0.2 IU/kg body weight.

##### Method of administration

Scilin R in vials should be administered by subcutaneous injection. It is not recommended, however, can be administered intramuscularly.

In special cases, it can be also administered intravenously. Scilin R in vials can be used in intensive insulin therapy as nutritional or prandial insulin.

**Medicinal product Scilin R is administered subcutaneously by injection in the abdominal wall, the thigh, the upper arm, the deltoid region or the gluteal region. Injection sites should always be rotated within the same region in order to reduce the risk of lipodystrophy and cutaneous amyloidosis (see section 4.4 and 4.8).**

While making an injection, caution should be used to prevent needle insertion into a blood vessel. Do not massage the injection site after insulin administration. Inform your patients how to make the injection correctly.

Scilin R can be administered together with Scilin N (see: Drug preparation for use – Insulin mixing).

**Scilin R should be administered within 15 minutes before a meal.**

Scilin R can be used in combination with oral diabetes medications, e.g. metformin or glimepiride.

#### **Drug preparation for use**

Scilin R solution in vials does not require mixing before use. The preparation can be used only when transparent, colourless, free of particulate matter and looking like water.

Each package contains the Patient Information Leaflet with an instruction on how to make an injection.

#### ***Administering Scilin R with a syringe***

Insulin should be administered with special syringes marked with insulin units. It is recommended to use syringes of the same type and from the same manufacturer. Always check whether the syringe you are using is scaled for the strength of insulin used.

##### **a) Dose preparation**

- Remove the plastic cap from the cap (do not break the cap).
- Wipe the vial stopper with alcohol. Do not take the stopper out!
- Draw into the syringe a volume of air equal to the insulin dose.
- Pierce the rubber stopper with a needle placed on the syringe and inject the air into the vial.
- Invert the vial with the syringe.
- Make sure that the needle tip is immersed in insulin solution.
- Draw into the syringe the appropriate volume of insulin.
- Remove air bubbles from the syringe.
- Check the recommended dose again and withdraw the needle from the vial.

##### **b) Making the injection:**

- Disinfect the skin at the injection site.
- Stabilise the skin with one hand by lifting or pinching big surface to form a skin fold.
- Take the syringe with the other hand and keep it like a pencil. Pierce the needle into the skin (at 90° angle). Make sure the needle is fully inserted and well placed in subcutaneous fat and not in deeper skin layers (in very slim patients it may be necessary to place the needle not perpendicularly but at an angle).
- To inject insulin, push the plunger to the very end during less than 5 seconds.
- Keep a cotton pad with alcohol close to the needle and remove the needle from the skin. For a couple of seconds press the cotton pad with alcohol to the injection site. Do not rub the skin!
- To prevent tissue damage, change the injection site every time you administer the drug. The new injection site should be at least 1-2 cm away from the old one.

#### **Mixing solution of Scilin R with suspension of Scilin N**

Scilin R can be used in the mixture with Scilin N.

The decision on mixing solution of Scilin R with suspension Scilin N can be made only by a doctor. While making the mixture, always introduce short-acting Scilin R first into the syringe. Apply the above procedure to administer the drug.

#### **4.3. Contraindications**

Hypoglycaemia.

Hypersensitivity to human insulin or to any of the excipients listed in section 6.1, unless it is a part of a desensitisation programme.

#### **4.4. Special warnings and precautions for use**

A change of the type or brand of insulin used requires doctor's supervision. A change of insulin strength, brand (manufacturer), type (soluble, isophane, biphasic), origin (animal, human, human insulin analogue) and/or production method (DNA recombination or animal origin) may require dose modification.

In some patients, a change from animal insulin to human insulin may require dose modification. If dose modification is required, it should be done at the administration of the first dose of the new insulin or during the first weeks or months following the change.

In some patients changing from animal insulin to human insulin, early warning symptoms of hypoglycaemia can be less distinctive or totally different from those developed during application of animal insulin. With better glycaemia control (e.g. with intensive insulin therapy), the warning symptoms of hypoglycaemia can be less distinctive or may not develop at all. Patients should be informed about the risk. Other factors changing or weakening early warning symptoms of hypoglycaemia are: long-lasting diabetes, diabetic neuropathy, some medications, e.g.  $\beta$ -adrenolytics. Uncontrolled hypoglycaemia or hyperglycaemia may lead to loss of consciousness, coma or death.

Inappropriate dosing or therapy discontinuation, especially in insulin-dependent diabetes, may cause hyperglycaemia and ketoacidosis – life threatening conditions.

Human insulin administration can lead to production of antibodies, however their titre is lower than in the case of purified animal insulin.

Insulin requirement can change significantly with pancreatic, adrenal, pituitary and thyroid disease, renal or hepatic dysfunction.

Insulin requirement can increase during high fever, severe infection, diseases and disorders of the alimentary tract with nausea, vomiting, diarrhoea, delayed gastric emptying and absorption disorders and also during emotional disturbances.

Dose modification can also be required when the patient changes their physical activity or diet.

Patients intending to cross at least two time zones should consult their doctor with respect to the modification of the insulin administration mode. During an air trip, insulin should be kept in the hand luggage and not in a luggage hatch (it must not be frozen).

During long-term insulin therapy insulin-resistance can develop. In such a case the insulin dose should be increased.

#### Concomitant administration of Scilin R with pioglitazone:

Cardiac insufficiency cases have been reported with concomitant administration of insulin with pioglitazone, especially in patients with cardiac insufficiency risk factors. This should be considered before using any combination treatment with Scilin R and pioglitazone. When combination treatment is administered, patients should be monitored for signs and symptoms of cardiac insufficiency, increased body weight and oedema. If cardiovascular symptoms occur, pioglitazone should be discontinued.

Patients must be instructed to perform continuous rotation of the injection site to reduce the risk of developing lipodystrophy and cutaneous amyloidosis. There is a potential risk of delayed insulin absorption and worsened glycaemic control following insulin injections at sites with these reactions. A sudden change in the injection site to an unaffected area has been reported to result in hypoglycaemia. Blood glucose monitoring is recommended after the change in the injection site, and dose adjustment of antidiabetic medications may be considered.

#### Excipients

This medicinal product contains less than 1 mmol sodium (23 mg) per dose unit, that is to say essentially 'sodium-free'.

### **4.5. Interactions with other medicinal products and other forms of interaction**

Some medicinal products can change glucose metabolism. The doctor should take the potential interaction into account and ask the patient about other medicinal products used by them.

Insulin requirement can be increased by substances showing hyperglycaemic action, such as glucocorticosteroids, thyroid hormone, growth hormone, danazol,  $\beta_2$ -sympathomimetics (ritodrine, salbutamol, terbutaline), diuretic thiazides

Insulin requirement may decrease when hypoglycaemic agents are used, e.g. oral hypoglycaemic medications, salicylates (e.g. acetylsalicylic acid), some antidepressants (monoamine oxidase inhibitors), some angiotensin convertase inhibitors (captopril, enalapril), angiotensin II receptor antagonists, non-selective beta-adrenolytic drugs and alcohol.

Insulin requirement may be changed by somatostatin analogues (octreotide, lanreotide).

#### **4.6. Fertility, pregnancy and lactation**

##### Pregnancy

In women treated with insulin (insulin-dependent diabetes or gestational diabetes) it is necessary to maintain the right control throughout the pregnancy. Insulin requirement usually decreases during the first trimester of pregnancy and increases during the second and third trimester. Diabetic women should be informed that pregnancy or planned pregnancy require consultation with the managing doctor.

In diabetic pregnant women it is necessary to closely monitor the glucose levels and general health conditions.

Immediately after the delivery, insulin requirement decreases abruptly.

##### Breastfeeding

In diabetic breastfeeding mothers insulin dose modification and/or diet change can be necessary as during lactation insulin requirement drops below the pre-pregnancy level. It comes back to the initial level after 6-9 months.

#### **4.7. Effects on ability to drive and use machines**

Due to hypoglycaemia, patient's concentration and ability to react can be reduced. Situations requiring these abilities (e.g. driving and using machines) can be dangerous to the patient.

Patients should be informed to be cautious to prevent hypoglycaemia while driving. It is especially important for individuals that do not experience intensive warning symptoms of hypoglycaemia or are not aware of them and who often develop hypoglycaemia. In such cases the necessity of driving should be considered.

#### **4.8. Undesirable effects**

In insulin therapy, the most frequent undesirable effect is hypoglycaemia. Severe hypoglycaemia may lead to loss of consciousness and even death. The frequency of hypoglycaemia is not determined since hypoglycaemia can be a consequence of insulin administration as well as other factors, e.g. diet or physical activity.

##### ***Immune system disorders***

A topical allergic reaction is a frequent (1/100 to <1/10) undesirable effect. At insulin injection site erythema, oedema and itching may occur. The symptoms usually disappear in a couple of days or weeks. In some cases topical reactions can be caused by factors other than insulin, e.g. irritating substances included in skin disinfectants or a wrong injection technique.

Systemic allergic reactions indicative of generalised hypersensitivity to insulin are very rare (<1/10 000) but are potentially more dangerous. The symptoms include: eruption all over body, dyspnoea, wheezing

breath, lowered arterial pressure, accelerated pulse and sweating. In serious cases, generalised allergy symptoms can be life threatening. Rare cases of severe allergy to Scilin R require immediate treatment. Insulin change or desensitisation can be necessary.

#### *Skin and subcutaneous tissue disorders*

Frequency ‘not known’: Cutaneous amyloidosis

#### Description of selected adverse reactions

Skin and subcutaneous tissue disorders: Lipodystrophy and cutaneous amyloidosis may occur at the injection site and delay local insulin absorption. Continuous rotation of the injection site within the given injection area may help to reduce or prevent these reactions (See section 4.4).

Following adverse reactions have been reported during post-marketing experience:

- Cases of oedema, particularly if previous poor metabolic control is improved by intensified insulin therapy;
- Cases of weight gain;
- Injection site reactions: injection site discoloration, injection site bleeding, injection site induration, injection site mass, injection site nodule, injection site pain, injection site rash, injection site urticaria, injection site pustule;
- Cases of pruritus and generalized pruritus;
- Cases of dizziness.

#### Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system.

### **4.9. Overdose**

There is no single definition of insulin overdosing because serum glucose is a result of the complex dependence between insulin levels, glucose availability and metabolic processes. Excessive insulin activity in relation to food consumption and energy expenditure may lead to hypoglycaemia.

Hypoglycaemia symptoms include: apathy, confusion, palpitation, headache, sweating and vomiting. Moderate hypoglycaemia subsides upon administration of oral glucose or other sugar-rich products.

Moderate hypoglycaemia can be controlled by intramuscular or subcutaneous administration of glucagon followed by oral administration of carbohydrates when patient’s condition improves sufficiently. In case the patient does not respond to glucagon, glucose solution should be administered intravenously.

If the patient is in coma, glucagon should be administered intramuscularly or subcutaneously. In case glucagon is not available or the patient does not respond to glucagon, glucose solution should be administered intravenously. Immediately after regaining consciousness, the patient should be given a meal.

Long-term oral carbohydrate administration and patient monitoring may be necessary since hypoglycaemia can recur after a short clinical improvement.

## **5. PHARMACOLOGICAL PROPERTIES**

### **5.1. Pharmacodynamic properties**

Pharmacotherapeutic group: : short-acting insulin, ACT code: A10AB01

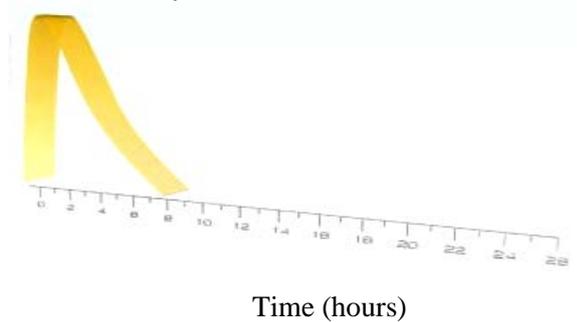
The fundamental insulin action is regulating glucose metabolism.

Moreover, insulin has several anabolic and anti-catabolic actions, depending on the type of tissue. In muscular tissue insulin intensifies synthesis of glycogen, fatty acids, glycerol and proteins. It increases amino acid uptake and simultaneously reduces the intensity of glycogenolysis, gluconeogenesis, ketogenesis, lipolysis, protein catabolism and amino acid consumption.

A typical activity profile (glucose consumption curve) on subcutaneous insulin administration is shown below. During therapy, deviations from the mean value in time and depending on insulin action intensity are recorded. Individual deviations may be associated with such factors as: dose size, injection site, body temperature and physical activity.

### **Scilin R**

Insulin activity



## **5.2. Pharmacokinetic properties**

Insulin pharmacokinetics do not reflect metabolic activity of the hormone. Thus, while assessing insulin activity, it is more appropriate to analyse glucose consumption curves (as explained above).

## **5.3. Preclinical safety data**

Limited non-clinical data did not show toxicity with clinical relevance for humans other than the activity associated with the pharmacodynamic activity consisting in blood glucose lowering (hypoglycaemia).

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1. List of excipients**

Glycerol  
metacresol  
Hydrochloric acid  
Sodium hydroxide  
Water for injections

### **6.2. Incompatibilities**

Scilin R products must not be mixed with insulins of other manufacturers and insulins of animal origin.

### **6.3. Shelf life**

3 years

#### **6.4. Special precautions for storage**

Store in a refrigerator (2°C - 8°C). Do not freeze.

Upon opening the package, the product is stable for 28 days at temperature up to 25°C. Scilin R should be protected from light.

Vials that are used or intended to be used should not be kept in a refrigerator. The patient can carry them on themselves. Scilin R should be protected from high temperature.

#### **6.5. Nature and contents of the container**

Glass vial, closed with aluminum cap with double-layered rubber disc and polypropylene cap, containing 10 ml of Scilin R, packed in carton box..

#### **6.6. Special precautions for disposal and other handling**

Used needles must not be reused. They should be disposed of in a safe way. Needles and syringes must not be shared with other people. Any unused medicinal product or waste material should be disposed of in accordance with local requirements

### **7. MARKETING AUTHORISATION HOLDER**

BIOTON S.A.,  
5 Staroscinska St.,  
02-516 Warsaw

### **8. MARKETING AUTHORISATION NUMBER**

<[To be completed nationally]>

### **9. DATE OF THE FIRST AUTHORISATION / RENEWAL OF THE AUTHORISATION**

Date of the first marketing authorization: <[To be completed nationally]>

Date of the last renewal of the marketing authorization: <[To be completed nationally]>

### **10. DATE OF THE REVISION OF THE TEXT**

<[To be completed nationally]>