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# HUMAN ALBUMIN 200 g/l Takeda

## COMPOSITION

One l of solution contains:

**Active ingredient:**

Human albumin produced from human plasma of venous origin.

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| Protein with an albumin content of at least 95% | 200 g |

**Inactive ingredients:**

| | |
|---|---|
| Sodium caprylate | 16 mmol |
| Sodium acetyl tryptophanate | 16 mmol |
| Electrolyte concentration: $Na^+$ | 100-130 mmol |
| Water for injections | ad 1 l |

## PHARMACEUTICAL FORM AND CONTENTS

Concentrated solution for intravenous use.

## PHAMACO-THERAPEUTIC GROUP

Blood product. Plasma volume expander.

## MANUFACTURER AND LICENSE HOLDER

Takeda Manufacturing Austria AG
Industriestrasse 67
A-1221 Vienna, Austria

## THERAPEUTIC INDICATIONS

Albumin replacement in patients with major albumin deficiency due to:
- Hepatic cirrhosis
- Nephrotic syndrome
- Fluid loss into the extravascular compartment

Oedema in patients with albumin deficiency
Pre-and postoperative treatment
HUMAN ALBUMIN diluted to a 5% solution with isotonic electrolyte and/or dextrose solution can be used for treatment of hypovolemic states such as:
- Shock due to blood loss
- Burns with increased haematocrit

## CONTRAINDICATIONS

HUMAN ALBUMIN administration is contraindicated among patients with a history of allergic reactions to albumin and to any of the excipients.
HUMAN ALBUMIN solutions must not be diluted with water for injections as this may cause hemolysis in recipients. There exists a risk of potentially fatal hemolysis and acute renal failure from the inappropriate use of Sterile Water for Injection as a diluent for HUMAN ALBUMIN.

## SPECIAL WARNINGS AND PRECAUTIONS FOR USE

WARNINGS

Human albumin solutions have been reported to contain trace amounts of aluminium. In accordance with the limits set by Ph.Eur. (1995/255), HUMAN ALBUMIN 200 g/l contains less than 200 µg per litre. It is, therefore, suitable for use in premature infants and patients with renal disease. Nevertheless, accumulation of aluminium in patients with chronic renal insufficiency has led to toxic effects such as hypercalcaemia, vitamin D refractory osteodystrophy, anaemia, and severe progressive encephalopathy. When large volumes of human albumin solutions are considered for administration to such patients, the potential risks as compared to expected benefits should be carefully evaluated.

Allergic Reaction/Anaphylactic Shock

Suspicion of allergic or anaphylactic type reactions requires immediate discontinuation of the injection. In case of shock, standard medical treatment for shock should be implemented.

Transmission of Infectious Agents

Standard measures to prevent infections resulting from the use of medicinal products prepared from human blood or plasmas include selection of donors, screening of individual donations and plasma pools for specific markers of infection and the inclusion of effective manufacturing steps for the inactivation/removal of viruses. Despite this, when medicinal products prepared from human blood or plasma are administered, the possibility of transmitting infective agents cannot be totally excluded. This also applies to unknown or emerging viruses and other pathogens.

There are no reports of viral transmissions with products manufactured to European Pharmacopeia specifications by established processes.

It is strongly recommended that every time that Albumin (Human) is administered to a patient, the name and batch number of the product are recorded in order to maintain a link between the patient and the batch of the product.

**PRECAUTIONS**

Hemodynamics

Do not administer HUMAN ALBUMIN without very close monitoring of hemodynamics, look for evidence of cardiac or respiratory failure, renal failure, or increasing intra-cranial pressure.

Hypervolemia/Hemodilution

HUMAN ALBUMIN should be used with caution in conditions where hypervolemia and its consequences or hemodilution could represent a special risk for the patient. Examples may include but are not limited to: Decompensated cardiac insufficiency, hypertension, esophageal varices, pulmonary edema, hemorrhagic diathesis, severe anemia, renal and post-renal failure.

The rate of administration should be adjusted according to the solution concentration and the patient's hemodynamic measurements. Rapid administration might cause circulatory overload and pulmonary edema. At the first clinical signs of cardiovascular overload

(headache, dyspnea, jugular vein congestion), or increased blood pressure, raised central venous pressure and pulmonary edema, the infusion is to be stopped immediately.

Pediatric

The safety and efficacy of the use of HUMAN ALBUMIN solution in pediatric patients have not been established in Baxter clinical trials; however, the use of albumin solutions in the pediatric population is referenced in the medical literature.

Large Volumes

If comparatively large volumes are to be replaced, controls of coagulation and hematocrit are necessary. Care must be taken to ensure adequate substitution of other blood constituents (coagulation factors, electrolytes, platelets, and erythrocytes). Appropriate hemodynamic monitoring should be undertaken.

Electrolyte Status

When HUMAN ALBUMIN is given, the electrolyte status of the patient should be monitored and appropriate steps taken to restore or maintain the electrolyte balance. Human Albumin solutions contain 100-130 mmol/l sodium. The amount of sodium in Human Albumin is to be taken into consideration for patients on a controlled sodium diet.

Blood pressure

A rise in blood pressure after HUMAN ALBUMIN infusion necessitates careful observation of the injured or post-operative patient in order to detect and treat severed blood vessels that may not have bled at a lower blood pressure.

**INTERACTIONS WITH OTHER MEDICINAL PRODUCTS AND OTHER FORMS OF INTERACTION**

No interaction studies have been performed with HUMAN ALBUMIN.

**PREGNANCY, LACTATION AND FERTILITY**: Category C

There are no adequate data from the use of HUMAN ALBUMIN in pregnant or lactating women. Physicians should carefully consider the potential risks and benefits for each specific patient before prescribing HUMAN ALBUMIN.

The effects of Albumin on fertility have not been established in controlled clinical trials.

**EFFECTS ON ABILITY TO DRIVE AND USE MACHINES**

There is no information of the effects of HUMAN ALBUMIN on the ability to drive or operate an automobile or other heavy machinery.

## ADVERSE REACTIONS

### 1. Adverse Reactions from Clinical Trials

There are no data available on adverse reactions from Baxter-sponsored clinical trials conducted with HUMAN ALBUMIN.

### 2. Post-Marketing Adverse Reactions

The following adverse reactions have been reported in the post-marketing experience.
IMMUNE SYSTEM DISORDERS: Anaphylactic shock, Anaphylactic reaction, Hypersensitivity/Allergic reactions
NERVOUS SYSTEM DISORDERS: Headache, Dsygeusia
CARDIAC DISORDERS: Myocardial infarction, Atrial fibrillation, Tachycardia
VASCULAR DISORDERS: Hypotension, Flushing
RESPIRATORY, THORACIC, AND MEDIASTINAL DISORDERS: Pulmonary edema, Dyspnea
GASTROINTESTINAL DISORDERS: Vomiting, Nausea
SKIN AND SUBCUTANEOUS TISSUE DISORDERS: Urticaria, Rash, Pruritus
GENERAL DISORDERS AND ADMINISTRATION SITE CONDITIONS: Pyrexia, Chills

## OVERDOSE

Hypervolemia may occur if the dosage and rate of infusion are too high. (See Precautions: Hypervolemia/Hemodilution)

## DOSAGE

In general, the dosage and infusion rate should be adjusted to the patient's individual requirements. The infusion rate should, as a rule, not exceed 1-2 ml per minute.
When human albumin is used in replacement therapy, the dosage required is guided by the usual circulatory parameters. The lowest limit for the colloidal osmotic pressure is 20 mm Hg (2.7 kPa). It is recommended to monitor the protein concentration achieved.
For administration the required dose in grams can be estimated using the following calculation:
[Required total protein (g/l)-actual total protein (g/l)] x plasma volume (l) x 2
Physiological plasma volume may be taken as approximately 40 ml per kg bodyweight.

* HIV-PCR is a quality-assured PCR testing program for genome equivalents of HIV-1 and-2, HBV, and HCV.
HIQ-PCR stands for Hyland Immuno Quality-Assured Polymerase Chain Reaction.
Pediatric use: In children the physiological plasma volume is age-dependent; this fact must be taken into account.
In cases of extensive substation or with haematocrit below 30%, packed red should be given to maintain the oxygen transport capacity of blood.

### Pre and Postoperative Treatment

Adults: 100 to 200 ml (20 to 40 g) of Human Albumin daily or diluted to 5%, depending on plasma volume and serum albumin level of the patient.
The dosage and duration of this substitution therapy depends on the amount of protein loss and should be continued until the serum concentration returns to normal.

Children: 1.5 to 3 ml (0.3 to 0.6 g) Human Albumin per kg bodyweight daily or diluted to a 5% solution. In hypoproteinemia multiple administration of albumin might be necessary until the plasma protein level has returned to normal.

**Hepatic Cirrhosis**

Adults: 100 to 200 ml (20 to 40 g) of Human Albumin daily.

Infants and children: 1.5 to 3 ml (0.3 to 0.6 g) Human Albumin per kg bodyweight.

**Nephrotic Syndrome**

Adults: 200 to 400 ml (40 to 80 g) of Human Albumin daily.

Infants and children: 3 to 6 ml (0.6 to 1.2 g) Human Albumin per kg bodyweight.

The dose should be infused over a period of 60 to 90 minutes.

**Oedema in patients with albumin deficiency**

Adults: 100 ml (20 g) of Human Albumin

Children: 2 ml (0.4 g) Human Albumin per kg bodyweight.

**Fluid Loss into the Extravascular Compartment**

Adults: 50 to 200 ml (10 to 40 g) of Human Albumin

Children: 1 to 2 ml (0.2 to 0.4 g) Human Albumin per kg bodyweight.

The initial dose should be infused over a period of 5 to 15 minutes.

**Shock due to blood loss**

Adults: 50 to 200 ml (10 to 40 g) of Human Albumin diluted 1:4 with isotonic electrolyte and/or dextrose solution (corresponding to 200 – 800 ml of a 5% albumin solution)

Children: 1 to 2 ml (0.2 to 0.4 g) Human Albumin per kg bodyweight diluted 1:4 with isotonic electrolyte and/or dextrose solution (corresponding to 4 – 8 ml of a 5% albumin solution)

In cases of severe blood loss, an initial dose of 20 g albumin (i.e. 400 ml of a 5% albumin solution should be infused rapidly (5 to 15 minutes).

If insufficient to control the shock, this dose should be repeated. The amount of diluted albumin to be administered depends on the severity of blood loss. The quantity given should restore blood pressure, pulse rate, and venous pressure to normal.

**Burns with Increased Haematocrit**

Adults: 200 to 400 ml (40 to 80 g) of Human Albumin diluted 1:4 with isotonic electrolyte and/or dextrose solution (corresponding to 800 – 1600 ml of a 5% albumin solution).

Children: 4 ml (0.8 g) Human Albumin per kg bodyweight diluted 1:4 with isotonic electrolyte and/or dextrose solution (corresponding to 16 ml of a 5% albumin solution).

The dosage of human albumin used as colloidal volume replacement has to be adjusted to the burn victim's clinical needs.

After the acute stage has been brought under control, considerable protein deficiency, largely of albumin, may occur. This hypoalbuminemia can be corrected by administration of the following doses.

Adults: 50 ml (10 g) of Human Albumin twice a day.

Children: 1 ml (0.2 g) Human Albumin per kg bodyweight twice a day.

**METHOD OF ADMINSTRATION**

HUMAN ALBUMIN must be administered intravenously. If large volumes are administered, the product should be warmed to room or body temperature before use. HUMAN ALBUMIN contains no isoagglutinins or blood group substances; it may thus be administered regardless of the patient's blood group or Rhesus factor.

Do not use after the expiry date given on the label.
Usually the solution is clear or slightly opalescent. Do not use solutions that are cloudy or have deposits.
Once the infusion bottle has been opened, the contents should be used immediately. Any unused solution must be discarded appropriately.
Albumin solutions should not be mixed with protein hydrolysates or solutions containing alcohol since these combinations may cause the proteins to precipitate.

Do not add supplementary medication.

Hypervolemia may occur if the dosage and rate of infusion are not adjusted, giving consideration to the solution concentration and the patient's clinical status. Hemodynamic parameters should be monitored in patients receiving HUMAN ALBUMIN and should be used to check for the risk of hypervolemia and cardiovascular overload. (See PRECAUTIONS).

**Instructions for Use, Handling, and Disposal**

HUMAN ALBUMIN solutions should not be mixed with other medicinal products including blood and blood components, but can be used concomitantly when deemed medically necessary.

Do not use unless solution is clear and seal is intact. Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. If leaks are found, discard.

There is a risk of potentially fatal hemolysis and acute renal failure from the use of Sterile Water for Injection as a diluent for HUMAN ALBUMIN in concentrations of 20% or higher. Acceptable diluents include 0.9% Sodium Chloride or 5% Dextrose in Water.

**HOW SUPPLIED**
The product is available in packs containing vials of 50 ml or 100 ml of HUMAN ALBUMIN 200 g/l.

**SHELF LIFE AND STORAGE**
3 years and do not store above 25º C
Protect from light and avoid freezing.