

Claims:

1. A method for producing a transplant from animal dermis, in particular from porcine dermis, comprising the following steps:
 - a) providing animal dermis;
 - b) treating the animal dermis with an aqueous alkaline solution containing 0.01 to 1.5% by weight of sodium sulfide;
 - c) treating the dermis once or several times with an aqueous saline solution;
 - d) treating the dermis once or several times with an aqueous hydrogen peroxide solution; and
 - e) dehydrating the dermis.
2. A method in accordance with claim 1, characterized in that an aqueous solution is used in step b) which contains 0.75 to 1.5% by weight, and preferably 1% by weight of sodium sulfide.
3. A method in accordance with at least one of the preceding claims, characterized in that an aqueous solution is used in step b) which, in addition to sodium sulfide, contains 0.001 to 0.5 M sodium hydroxide, preferably 0.005 to 0.4 M sodium hydroxide, particularly preferably 0.01 to 0.3 M sodium hydroxide, in particular preferably 0.05 to 0.2 M sodium hydroxide, very particularly preferably 0.075 to 0.125 M sodium hydroxide, and most preferably approximately 0.1 M sodium hydroxide.

4. A method in accordance with at least one of the preceding claims, characterized in that
the dermis is treated in step b) for 1 to 48 hours, preferably for 5 to 36 hours, particularly preferably for 12 to 24 hours, and very
5 particularly preferably for 14 to 20 hours with a volume of an aqueous solution containing sodium sulfide relative to the dermis of 5-fold to 15-fold, preferably a volume of 6-fold to 14-fold, in particular preferably a volume of 7-fold to 13-fold, further preferably a volume of 8-fold to 12-fold, and very particularly preferably a
10 volume of 9-fold to 11-fold.
5. A method in accordance with at least one of the preceding claims, characterized in that
the dermis is treated in step c) with an aqueous solution containing
15 1 to 50% by weight salt, preferably 2 to 20% by weight, particularly preferably 5 to 15% by weight, and very particularly preferably 10% by weight, with the salt preferably being an alkaline metal halide, particularly preferably an alkaline metal chloride such as potassium chloride, lithium chloride.
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6. A method in accordance with at least one of the preceding claims, characterized in that
the dermis is treated two to ten times, preferably three to five times and particularly preferably four times with an aqueous saline
25 solution in step c), with the dermis being treated and/or rinsed with water in each case between the treatment steps with saline solution.
7. A method in accordance with at least one of the preceding claims, characterized in that
30 the dermis is treated with an aqueous solution in step d) which

contains 1 to 10% by weight hydrogen peroxide, preferably 2 to 5% by weight hydrogen peroxide, and particularly preferably 3% by weight hydrogen peroxide.

- 5 8. A method in accordance with at least one of the preceding claims,
characterized in that
the dermis is treated two to five times, and preferably three times,
with an aqueous hydrogen peroxide solution in step d), with the
dermis being treated and/or rinsed with water in each case between
10 the treatment steps with the hydrogen peroxide solution.
9. A method in accordance with at least one of the preceding claims,
characterized in that
the dermis is dehydrated in step e) by two-time to ten-time,
15 preferably by four-time to eight-time, and particularly preferably by
six-time treatment with an organic solvent selected from the group
comprising acetone, methanol, ethanol and isopropyl alcohol.

10. A method in accordance with at least one of the preceding claims, characterized in that porcine dermis is provided in step a).
- 5 11. A method in accordance with claim 10, characterized in that the provision of the dermis in step a) comprises the following steps:
- 10 a₁) cleansing the skin of a slaughtered pig using water optionally containing detergent, with the water having a temperature between room temperature and a maximum of 40°C;
- a₂) removing the skin from the back area of the pig;
- a₃) removing the bristles from the skin prepared in step a₂); and
- 15 a₄) removing the subcutis and the epidermis from the dermis using a cutting machine.
12. A transplant which can be obtained in accordance with a method in accordance with at least one of the preceding claims.
- 20 13. A transplant according to claim 12 for the use in hernia surgery, for treating incisional hernias or for treating a burst abdomen.

Claims:

1. A method for producing a transplant from animal dermis, in particular from porcine dermis, comprising the following steps:
 - a) providing animal dermis;
 - b) treating the animal dermis with an aqueous solution containing sodium sulfide;
 - c) treating the dermis once or several times with an aqueous saline solution;
 - d) optionally, treating the dermis once or several times with an aqueous hydrogen peroxide solution; and
 - e) dehydrating the dermis.
2. A method in accordance with claim 1, characterized in that an aqueous alkaline solution containing sodium sulfide is used in step b).
3. A method in accordance with claim 1 or claim 2, characterized in that an aqueous solution is used in step b) which contains 0.01 to 10% by weight sodium sulfide, preferably 0.1 to 5% by weight, particularly preferably 0.5 to 3% by weight, very particularly preferably 0.75 to 1.5% by weight, and most preferably 1% by weight.
4. A method in accordance with at least one of the preceding claims, characterized in that

an aqueous solution is used in step b) which, in addition to sodium sulfide, contains 0.001 to 0.5 M sodium hydroxide, preferably 0.005 to 0.4 M sodium hydroxide, particularly preferably 0.01 to 0.3 M sodium hydroxide, in particular preferably 0.05 to 0.2 M sodium hydroxide, very particularly preferably 0.075 to 0.125 M sodium hydroxide, and most preferably approximately 0.1 M sodium hydroxide.

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10 5. A method in accordance with at least one of the preceding claims, characterized in that
the dermis is treated in step b) for 1 to 48 hours, preferably for 5 to 36 hours, particularly preferably for 12 to 24 hours, and very particularly preferably for 14 to 20 hours with a volume of an aqueous solution containing sodium sulfide relative to the dermis of
15 5-fold to 15-fold, preferably a volume of 6-fold to 14-fold, in particular preferably a volume of 7-fold to 13-fold, further preferably a volume of 8-fold to 12-fold, and very particularly preferably a volume of 9-fold to 11-fold.

20 6. A method in accordance with at least one of the preceding claims, characterized in that
the dermis is treated in step c) with an aqueous solution containing
1 to 50% by weight salt, preferably 2 to 20% by weight, particularly preferably 5 to 15% by weight, and very particularly preferably 10%
25 by weight, with the salt preferably being an alkaline metal halide or an earth alkaline metal halide, particularly preferably an alkaline metal chloride or an earth alkaline metal chloride such as potassium chloride, lithium chloride, magnesium chloride or calcium chloride.

7. A method in accordance with at least one of the preceding claims, characterized in that
the dermis is treated two to ten times, preferably three to five times
and particularly preferably four times with an aqueous saline
5 solution in step c), with the dermis being treated and/or rinsed with
water in each case between the treatment steps with saline solution.
8. A method in accordance with at least one of the preceding claims, characterized in that
10 the dermis is treated with an aqueous solution in step d) which
contains 1 to 10% by weight hydrogen peroxide, preferably 2 to 5%
by weight hydrogen peroxide, and particularly preferably 3% by
weight hydrogen peroxide.
- 15 9. A method in accordance with at least one of the preceding claims, characterized in that
the dermis is treated two to five times, and preferably three times,
with an aqueous hydrogen peroxide solution in step d), with the
dermis being treated and/or rinsed with water in each case between
20 the treatment steps with the hydrogen peroxide solution.
10. A method in accordance with at least one of the preceding claims, characterized in that
25 the dermis is dehydrated in step e) by two-time to ten-time,
preferably by four-time to eight-time, and particularly preferably by
six-time treatment with an organic solvent selected from the group
comprising acetone, methanol, ethanol and isopropyl alcohol.

11. A method in accordance with at least one of the preceding claims, characterized in that porcine dermis is provided in step a).

5 12. A method in accordance with claim 11, characterized in that the provision of the dermis in step a) comprises the following steps:

- 10 a1) cleansing the skin of a slaughtered pig using water optionally containing detergent, with the water having a temperature between room temperature and a maximum of 40°C;
- a2) removing the skin from the back area of the pig;
- a3) removing the bristles from the skin prepared in step a2); and
- 15 a4) removing the subcutis and the epidermis from the dermis using a cutting machine.

13. A transplant which can be obtained in accordance with a method in accordance with at least one of the preceding claims.

20 14. Use of a transplant in accordance with claim 13 in hernia surgery, for treating incisional hernias or for treating a burst abdomen.