

- 86 -

Claims

1. A method for the cleavage of a solid phase-bound polypeptide from the solid phase, the method comprising contacting the solid phase, to which
5 the polypeptide is bound, with a composition consisting essentially of trifluoroacetic acid and 1,2-ethanedithiol, at a temperature in the range of about 23 °C to about 29°C.
2. The method of claim 1, wherein the solid phase comprises a Rink amide
10 resin.
3. The method of claim 1 or 2, wherein the polypeptide is bound to the Rink amide resin by a linker.
- 15 4. The method of any one of the preceding claims, wherein the composition comprises trifluoroacetic acid in an amount of about 95 to about 99 % v/v, and 1,2-ethanedithiol in an amount of about 1 to about 5 % v/v.
5. The method of any one of the preceding claims, wherein the composition
20 essentially consists of trifluoroacetic acid in an amount of about 97 % v/v, and 1,2-ethanedithiol in an amount of about 3 % v/v.
6. The method of any one of the preceding claims, wherein the composition is contacted with the solid phase to which the polypeptide is bound, at a
25 temperature of about 25°C to about 27°C, preferably at a temperature of about 26°C.
7. The method of any one of the preceding claims, wherein the composition is contacted with the solid phase to which the polypeptide is bound for 1
30 to 8 h, preferably for 3 to 5 h.
8. The method of any one of the preceding claims, wherein the polypeptide is selected from GLP-1, analogs and derivatives thereof, exendin-3,

- 87 -

analogs and derivatives thereof, and exendin-4, analogs and derivatives thereof.

9. The method of claim 8, wherein the polypeptide is selected from exendin-4, lixisenatide, albiglutide, dulaglutide and semaglutide.

10. A method for the solid-phase synthesis of a polypeptide comprising a pre-determined amino acid sequence, said method comprising:

(a) coupling an amino acid building block, comprising an unprotected C-terminal carboxyl group and a protected N-terminal amino group, C-terminally to a solid phase, such as a Rink amide resin,

(b) de-protecting the N-terminal amino group of the amino acid building block,

(c) coupling an amino acid building block, comprising an unprotected C-terminal carboxyl group and a protected N-terminal amino group, C-terminally to the unprotected N-terminal amino of step (b),

(d) optionally repeating steps (b) and (c), and

(e) cleaving the polypeptide from the solid phase by the method of any one of the claims 1 to 9.

20

11. The method of claims 10, wherein the polypeptide is selected from GLP-1, analogs and derivatives thereof, exendin-3, analogs and derivatives thereof, and exendin-4, analogs and derivatives thereof.

12. The method of claim 10 or 11, wherein the polypeptide is selected from exendin-4, lixisenatide, albiglutide, dulaglutide and semaglutide.

13. Composition, consisting essentially of trifluoroacetic acid and 1,2-ethanedithiol, wherein the composition comprises trifluoroacetic acid in an amount of 95 to 99 % v/v, and 1,2-ethanedithiol in an amount of 1 to 5 % v/v.

30

- 88 -

14. Composition of claim 13, essentially consisting of trifluoroacetic acid in an amount of about 97 % v/v, and 1,2-ethanedithiol in an amount of about 3 % v/v.
- 5 15. Use of the composition of claim 13 or 14 in a solid-phase synthesis of a polypeptide, wherein the composition is in particular used to cleave the polypeptide from the solid phase.