~~Claims~~

~~1. A botulinum toxin in combination with an anticholinergic for use in a method of preventing radiation damage to the glands, wherein the radiation damage is caused by radioligands.~~

~~2. The botulinum toxin in combination with an anticholinergic for use in a method of preventing radiation damage to the glands according to claim 1, wherein the radiation damage is caused by a PSMA radioligand.~~

~~3. The botulinum toxin in combination with an anticholinergic for use in a method of preventing radiation damage to the glands according to claims 1 and 2, wherein the radiation damage is selected from the group consisting of ^{225}Ac-PSMA, ^{68}Ga-PSMA, ^{18}F-PSMA or ^{177}Lu-PSMA.~~

~~4. The botulinum toxin in combination with an anticholinergic for use according to claim 1, wherein the botulinum toxin is selected from the group consisting of botulinum toxin types A, B, C, D, E, F and G.~~

~~5. The botulinum toxin in combination with an anticholinergic for use according to anyone of the preceding claims, wherein the botulinum toxin comprises between 1 and 10,000 units.~~

~~6. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims, wherein the botulinum toxin is a botulinum toxin type A.~~

~~7. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims comprising between 1 and 1,500 units of botulinum toxin type A.~~

~~8. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims, wherein the botulinum toxin is a botulinum toxin type B.~~

~~9. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims, comprising between 100 and 10,000 units of botulinum toxin type B.~~

~~10. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims, wherein the botulinum toxin is a botulinum toxin type E or type F.~~

~~11. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims comprising between 1 and 10,000 units of botulinum toxin type E or type F.~~

~~12. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims, wherein the anticholinergic is selected from the group consisting of tropicamide, atropine, scopolamine, glycopyrrolate, amitriptyline, clonidine, ipratropium bromide and trihexyphenidyl.~~

~~13. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims, wherein the anticholinergic is to be administered transdermally, orally or intravenously.~~

~~14. The botulinum toxin in combination with an anticholinergic for use according to any one of the preceding claims, wherein the anticholinergic is scopolamine, wherein the scopolamine is to be administered transdermally.~~

~~15. A botulinum toxin type B for the prevention of radiation damage to the parotid, submandibular, sublingual, minor salivary and ocular glands, wherein radiation damage is caused by radioligands.~~

~~16. A botulinum toxin type A for use in a method for preventing radiation damage to the glands, wherein the botulinum toxin type A is to be administered contralaterally into the respective parotid gland or mandibular gland.~~

~~17. The botulinum toxin type A for use according to claim 16, wherein 100 units of botulinum toxin type A is to be administered into a parotid gland, and 50 units of botulinum toxin type A is to be administered into the respective contralateral mandibular gland.~~

~~18. The botulinum toxin type A for use according to claim 16, wherein the botulinum toxin type A is to be administered in a dose ratio of 2/3 into the parotid glands and 1/3 into the submandibular glands.~~

~~19. The botulinum toxin type A for use according to claim 16, wherein the patient has a life expectancy of between six and twelve months.~~

~~20. The botulinum toxin type A for use according to claim 16, wherein the patient is aged 75 years or older.~~

~~21. The botulinum toxin type A for use according to claim 16, wherein the patient is suffering from either a mild cognitive impairment or dementia.~~

~~22. The botulinum toxin type A for use according to claim 16, wherein the patient is co- or multi-morbid.~~

~~23. The botulinum toxin type A for use according to claim 16 for lowering aquaporin-mediated radionuclide uptake in the submandibular and salivary gland cells.~~

~~24. The botulinum toxin type B for use according to claim 15, wherein the botulinum toxin type B is to be administered in a dose ratio of 2/3 into the parotid glands and 1/3 into the submandibular glands.~~

~~25. The botulinum toxin type B for use according to claim 15, wherein the botulinum toxin type B is to be administered contralaterally into the respective parotid gland or mandibular gland.~~

~~26. The use according to any one of the preceding claims, wherein the botulinum toxin is to be administered one day to eight weeks prior to a diagnostic imaging procedure or prior to radiological treatment using one or more radioligands.~~

~~27. The use according to any one of the preceding claims, wherein the anticholinergic is to be administered three days, two days, one day and on the same day prior to a diagnostic imaging procedure or prior to radiological treatment using one or more radionuclides, and about 7 to 30 days after the diagnostic imaging procedure or after a radiological treatment.~~

~~28. The use according to any one of the preceding claims, wherein the botulinum toxin is to be administered one day to eight weeks and the anticholinergic is to be administered three days, two days, one day and on the same day prior to a diagnostic imaging procedure or prior to radiological treatment using one or more radionuclides, and about 7 to 30 days after the diagnostic imaging procedure or after a radiological treatment.~~

~~29. The use according to any one of the preceding claims, wherein the glands are exocrine and/or endocrine glands.~~

~~30. The use according to any one of the preceding claims, wherein the gland is a seromucous gland.~~

~~31. The use according to any one of the preceding claims, wherein the botulinum toxin A acts by down-regulating the α-1 adrenoceptors in the glands.~~

~~32. The use according to any one of the preceding claims, wherein the use is carried out in a group of patients, which has already undergone anti-androgen therapy or is currently undergoing anti-androgen therapy, while radioligands may cause radiation damage according to claim 1.~~

Claims

1. A botulinum toxin in combination with an anticholinergic agent for use in a method for preventing radiation damage to glands, wherein the radiation damage is caused by radioligands and wherein the anticholinergic agent is selected from the group consisting of tropicamide, atropine, scopolamine, glycopyrrolate, amitriptyline, clonidine, ipratropium bromide and trihexyphenidyl.

2. The botulinum toxin in combination with an anticholinergic agent for use in a method for preventing radiation damage to glands according to claim 1, wherein the radiation damage is caused by a PSMA radioligand.

3. The botulinum toxin in combination with an anticholinergic agent for use in a method for preventing radiation damage to glands according to claims 1 and 2, wherein the radiation damage is selected from the group of ^{225}Ac-PSMA, ^{68}Ga-PSMA, ^{18}F-PSMA or ^{177}Lu-PSMA.

4. The botulinum toxin in combination with an anticholinergic agent for use according to claim 1, wherein the botulinum toxin is selected from the group consisting of the botulinum toxin types A, B, C, D, E, F and G.

5. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, wherein the botulinum toxin comprises between 1 and 10,000 units.

6. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, wherein the botulinum toxin is a botulinum toxin type A.

7. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, comprising between 1 and 1500 units of botulinum toxin type A.

8. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, wherein the botulinum toxin is a botulinum toxin type B.

9. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, comprising between 100 and 10,000 units of botulinum toxin type B.

10. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, wherein the botulinum toxin is a botulinum toxin type E or type F.

11. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, comprising between 1 and 10,000 units of botulinum toxin type E or type F.

12. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, wherein the anticholinergic agent is to be administered transdermally, orally or intravenously.

13. The botulinum toxin in combination with an anticholinergic agent for use according to any of the preceding claims, wherein the anticholinergic agent is scopolamine, wherein the scopolamine is to be administered transdermally.

14. A botulinum toxin type B for use in a method for preventing radiation damage to glands, wherein the radiation damage is caused by radioligands and wherein the botulinum toxin type B is to be administered contralaterally into the particular parotid gland or salivary gland.

15. A botulinum toxin type A for use in a method for preventing radiation damage to glands, wherein the radiation damage is caused by radioligands and wherein the botulinum toxin type A is to be administered contralaterally into the particular parotid gland or salivary gland.