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(54) **POLYPEPTIDES ET NUCLEOTIDES PORPHYROMONAS GINGIVALIS**

(54) **PORPHORYMONAS GINGIVALIS POLYPEPTIDES AND NUCLEOTIDES**

(57) La présente invention porte sur des polypeptides et des nucléotides Porphyromonas gingivalis. Les polypeptides comprennent: une séquence d'acides aminés sélectionnée dans le groupe comprenant les NOs ID SEQ 265 à 528, 531 et 532; ou une séquence d'acides aminés d'au moins 85 %, de préférence d'au moins 95 %, identique à la séquence sélectionnée dans le groupe précité; ou au moins 40 acides aminés ayant une séquence contiguë d'au moins 40 acides aminés identiques à une séquence d'acides aminés contiguë sélectionnée dans le groupe précité.

(57) The present invention relates to isolated Porphorymonas gingivalis polypeptides and nucleotides. The polypeptides include: an amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532; or an amino acid sequence at least 85 %, preferably at least 95 %, identical to an amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532; or at least 40 amino acids having a contiguous sequence of at least 40 amino acids identical to a contiguous amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532.

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(54) Title: *PORPHORYMONAS GINGIVALIS* POLYPEPTIDES AND NUCLEOTIDES

(57) Abstract

The present invention relates to isolated *Porphorymonas gingivalis* polypeptides and nucleotides. The polypeptides include: an amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532; or an amino acid sequence at least 85 %, preferably at least 95 %, identical to an amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532; or at least 40 amino acids having a contiguous sequence of at least 40 amino acids identical to a contiguous amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532.

CLAIMS:-

1. An isolated antigenic *Porphorymonas gingivalis* polypeptide, the polypeptide comprising;

an amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532; or

an amino acid sequence at least 85%, preferably at least 95%, identical to an amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532; or

at least 40 amino acids having a contiguous sequence of at least 40 amino acids identical to a contiguous amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532.

2. A polypeptide as claimed in claim 1 in which the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532.

3. A polypeptide as claimed in claim 1 in which the polypeptide comprises an amino acid sequence at least 85%, preferably at least 95%, identical to an amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532.

4. A polypeptide as claimed in claim 1 in which the polypeptide comprises at least 40 amino acids having a contiguous sequence of at least 40 amino acids identical to a contiguous amino acid sequence selected from the group consisting of SEQ. ID. NO. 265 to SEQ. ID. NO. 528, SEQ. ID. NO. 531 and SEQ. ID. NO. 532.

5. A polypeptide as claimed in claim 1 in which the polypeptide comprises;

an amino acid sequence selected from the group consisting of SEQ. ID. NO. 386 to SEQ. ID. NO. 528 and SEQ. ID. NO. 532; or

an amino acid sequence at least 85%, preferably at least 95%, identical to an amino acid sequence selected from the group consisting of SEQ. ID. NO. 386 to SEQ. ID. NO. 528 and SEQ. ID. NO. 532; or

at least 40 amino acids having a contiguous sequence of at least 40 amino acids identical to a contiguous amino acid sequence selected from the group consisting of SEQ. ID. NO. 386 to SEQ. ID. NO. 528 and SEQ. ID. NO. 532.

6. A polypeptide as claimed in claim 1 in which the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ. ID. NO. 386 to SEQ. ID. NO. 528 and SEQ. ID. NO. 532.

7. A polypeptide as claimed in claim 1 in which the polypeptide comprises an amino acid sequence at least 85%, preferably at least 95%, identical to an amino acid sequence selected from the group consisting of SEQ. ID. NO. 386 to SEQ. ID. NO. 528 and SEQ. ID. NO. 532.

8. A polypeptide as claimed in claim 1 in which the polypeptide comprises at least 40 amino acids having a contiguous sequence of at least 40 amino acids identical to a contiguous amino acid sequence selected from the group consisting of SEQ. ID. NO. 386 to SEQ. ID. NO. 528 and SEQ. ID. NO. 532.

9. A polypeptide as claimed in claim 6 in which the polypeptide comprises an amino acid sequence selected from the group consisting of SEQ. ID. NO. 386, SEQ. ID. NO. 424, SEQ. ID. NO. 425, SEQ. ID. NO. 434, SEQ. ID. NO. 447, SEQ. ID. NO. 458, SEQ. ID. NO. 475, SEQ. ID. NO. 498, SEQ. ID. NO. 499, SEQ. ID. NO. 500, SEQ. ID. NO. 501, SEQ. ID. NO. 387, SEQ. ID. NO. 400, SEQ. ID. NO. 411, SEQ. ID. NO. 419, SEQ. ID. NO. 420, SEQ. ID. NO. 427, SEQ. ID. NO. 429, SEQ. ID. NO. 433, SEQ. ID. NO. 437, SEQ. ID. NO. 438, SEQ. ID. NO. 443, SEQ. ID. NO. 444, SEQ. ID. NO. 448, SEQ. ID. NO. 449, SEQ. ID. NO. 452, SEQ. ID. NO. 455, SEQ. ID. NO. 457, SEQ. ID. NO. 459, SEQ. ID. NO. 461, SEQ. ID. NO. 462, SEQ. ID. NO. 463, SEQ. ID. NO. 467, SEQ. ID. NO. 468, SEQ. ID. NO. 469, SEQ. ID. NO. 482, SEQ. ID. NO. 484, SEQ. ID. NO. 485, SEQ. ID. NO. 494, SEQ. ID. NO. 508, SEQ. ID. NO. 509, SEQ. ID. NO. 510, SEQ. ID. NO. 520, SEQ. ID. NO. 521, SEQ. ID. NO. 522, SEQ. ID. NO. 525, SEQ. ID. NO. 526, SEQ. ID. NO. 528, SEQ. ID. NO. 389, SEQ. ID. NO. 390 and SEQ. ID. NO. 391.

10. An isolated antigenic *Porphorymonas gingivalis* polypeptide, the polypeptide comprising an amino acid sequence selected from the group consisting of SEQ. ID. NO. 386 to SEQ. ID. NO. 528 and SEQ. ID. NO. 532 less the leader sequence set out in Table 3.

11. An isolated DNA molecule, the DNA molecule comprising a nucleotide sequence which encodes the polypeptide as claimed in any one of claims 1 to 10 or a sequence which hybridises thereto under conditions of high stringency.

12. An isolated DNA molecule as claimed in claim 11 in which the DNA molecule comprises a nucleotide sequence selected from the group consisting of SEQ. ID. NO. 1 to SEQ. ID. NO. 264, SEQ. ID. NO. 529 and SEQ. ID. NO. 530.

13. A recombinant expression vector comprising the DNA molecule as claimed in claim 11 or claim 12 operably linked to a transcription regulatory element.

14. A cell comprising the recombinant expression vector as claimed in claim 13.

15. A method for producing a *P. gingivalis* polypeptide comprising culturing the cell as claimed in claim 14 under conditions that permit expression of the polypeptide.

16. A composition for use in raising an immune response directed against *P. gingivalis* in a subject, the composition comprising an effective amount of at least one polypeptide as claimed in any one of claims 1 to 10 and a pharmaceutically acceptable carrier.

17. A composition as claimed in claim 16 in which the composition further comprises at least one DNA molecule as claimed in claim 11 or claim 12.

18. A composition as claimed in claim 16 or claim 17 in which the pharmaceutically acceptable carrier is an adjuvant.

19. A method of treating a subject for *P. gingivalis* infection comprising administering to the subject a composition as claimed in any one of claims 16 or claim 18 such that treatment of *P. gingivalis* infection occurs.

20. A method as claimed in claim 19, wherein the treatment is a prophylactic treatment.

21. A method as claimed in claim 19, wherein the treatment is a therapeutic treatment.

22. A composition for use in raising an immune response directed against *P. gingivalis* in a subject, the composition comprising an effective amount of at least one DNA molecule as claimed in claim 11 or claim 12 and a pharmaceutically acceptable carrier.

23. A composition as claimed in claim 22 in which the pharmaceutically acceptable carrier is an adjuvant.

24. A method of treating a subject for *P. gingivalis* infection comprising administering to the subject a composition as claimed in claim 22 or claim 23 such that treatment of *P. gingivalis* infection occurs.

25. A method as claimed in claim 24, wherein the treatment is a prophylactic treatment.

26. A method as claimed in claim 24, wherein the treatment is a therapeutic treatment.

27. An antibody raised against a polypeptide as claimed in any one of claims 1 to 10.

28. An antibody as claimed in claim 27 in which the antibody is polyclonal.

29. An antibody as claimed in claim 27 in which the antibody is monoclonal.

30. A composition comprising at least one antibody as claimed in any one of claims 27 to 29.

31. A composition as claimed in claim 30 in which the composition adapted for oral use.

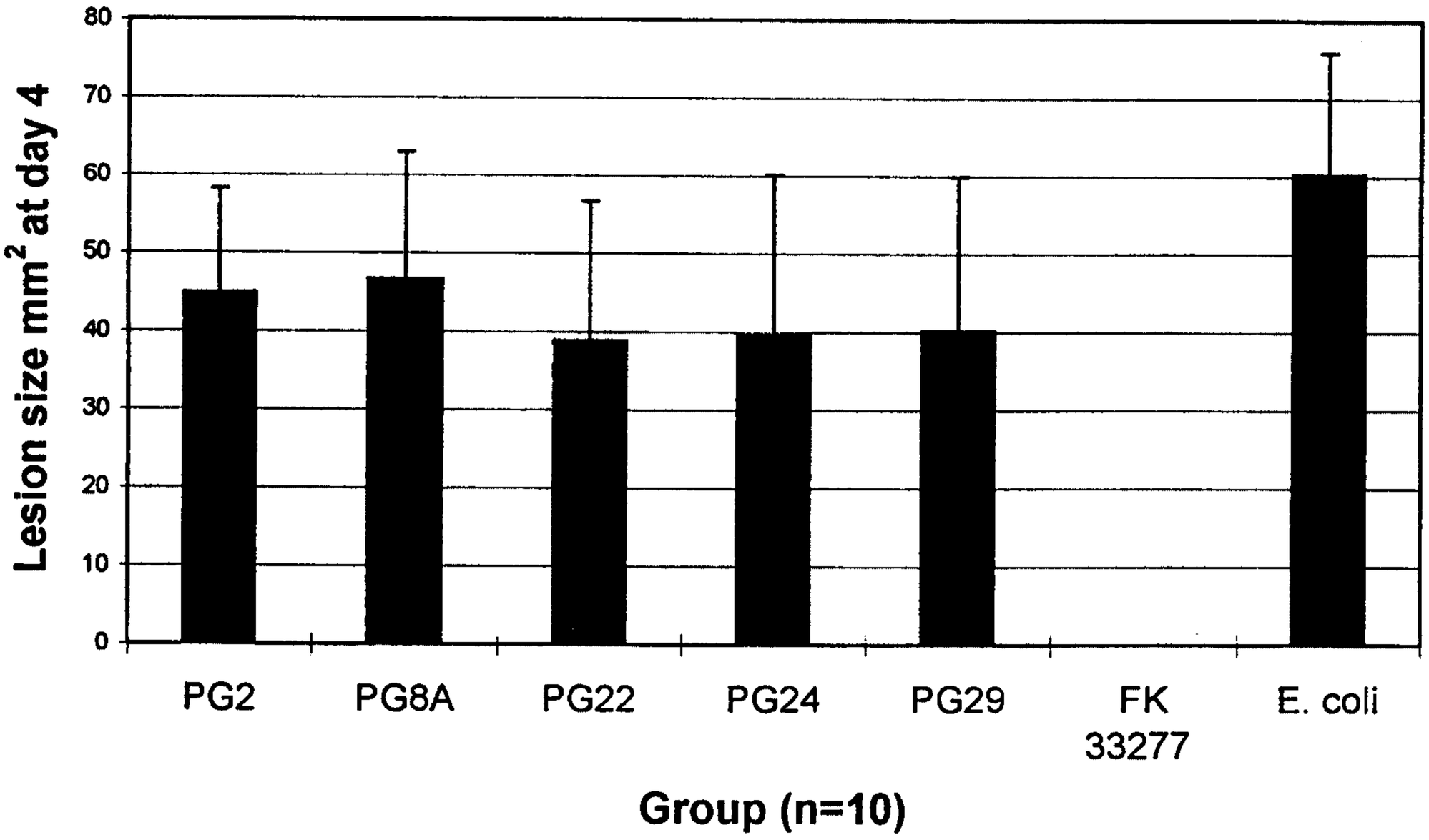
32. A nucleotide probe comprising at least 18 nucleotides and having a contiguous sequence of at least 18 nucleotides identical to a contiguous nucleotide sequence selected from the group consisting of SEQ. ID. NO. 1 to SEQ. ID. NO. 121, SEQ. ID. NO. 529 and sequences complementary thereto.

33. A nucleotide probe as claimed in claim 32 in which the probe further comprises a detectable label.

34. A method for detecting the presence of *P. gingivalis* nucleic acid in a sample comprising:

(a) contacting a sample with the nucleotide probe as claimed in claim 32 or claim 33 under conditions in which a hybrid can form between the probe and a *P. gingivalis* nucleic acid in the sample; and

(b) detecting the hybrid formed in step (a), wherein detection of a hybrid indicates the presence of a *P. gingivalis* nucleic acid in the sample.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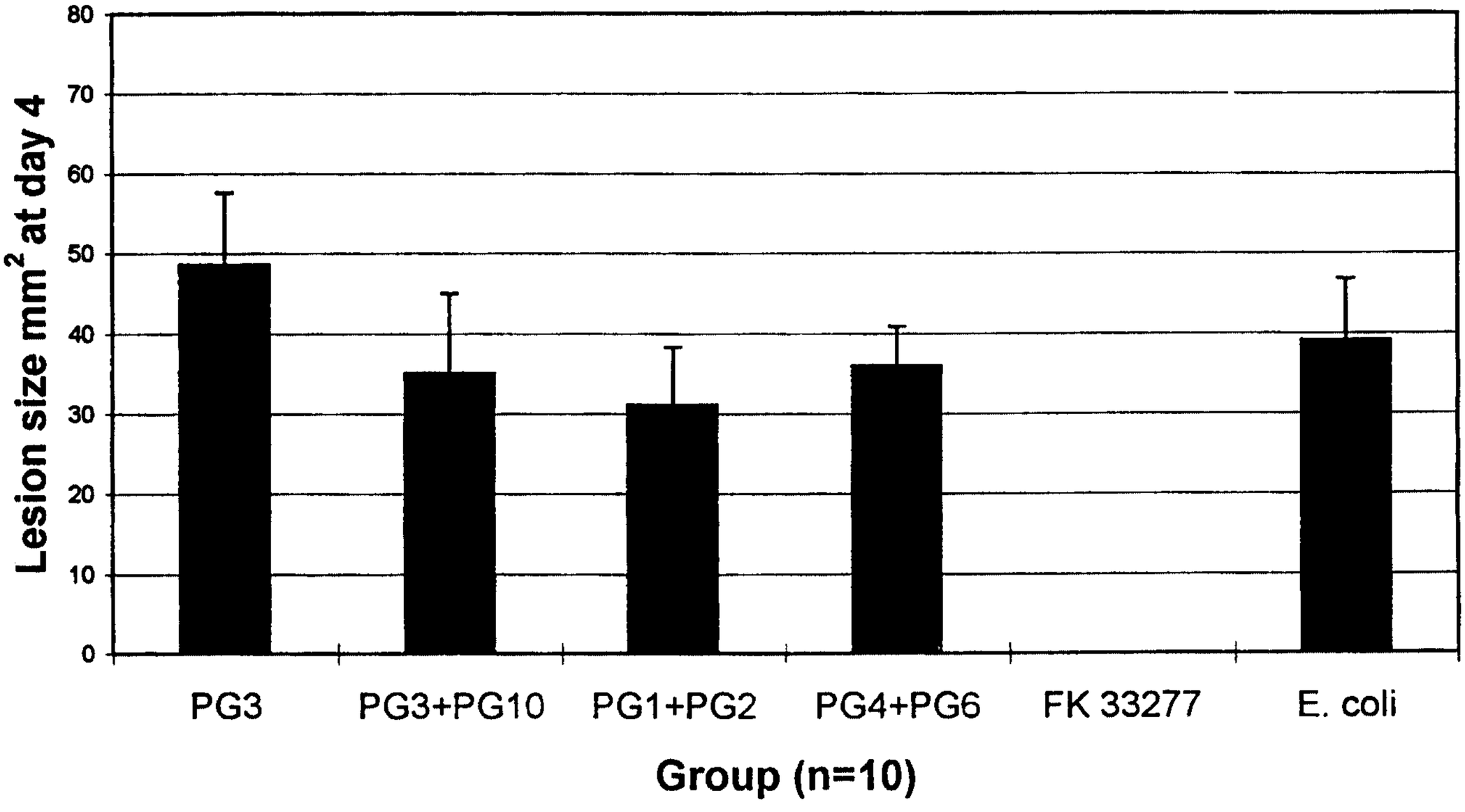
E. coli
Group (n=10)

Figure 1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FK 33277
E. coli
Group (n=10)

Figure 2