CLAIMS

1. A fusion protein comprising at least one Type 1 Ribosome Inactivating Protein (RIP) or fragment thereof, polypeptide B; and

(i) at least one polypeptide A capable of viral entry inhibition; and/or

(ii) at least one Cationic AntiMicrobial Peptide (CAP) or fragment thereof, polypeptide C.

2. The fusion protein according to claim 1, wherein the polypeptide A is theta defensin, an analogue, or a fragment thereof.

3. The fusion protein according to either claim 1 or 2, wherein the fusion protein comprises the structure A-B-C, A-C-B, C-A-B, C-B-A, B-A-C, B-C-A, A-B-C-C, A-B, B-A, B-C, C-B,C-B-C,or C-C-B-C-C.

4. The fusion protein according to any one of the preceding claims, wherein the fusion protein comprises polypeptides A, B and C.

5. The fusion protein according to any one of the preceding claims, wherein polypeptides A, B and C are directly linked to one another.

6. The fusion protein according to any one of claims 1 to 5 further comprising at least one linker peptide between each of the polypeptides A, B and C.

7. The fusion protein according to claim 6, wherein the linker peptide has SEQ ID NO: 11.

8. The fusion protein according to any one of the preceding claims, wherein polypeptide A is selected from the group consisting of Rhesus minidefensin (RTD-1), RTD-2, RTD-3, Retrocyclin-1, Retrocyclin-2, Retrocyclin-3, synthetic retrocyclin congener RC100, RC101, RC102, RC103, RC104, RC105, RC106, RC107, RC108, RC110, RC111, RC112, RC113 and RC114.

9. The fusion protein according to any one of the preceding claims, wherein the Type 1 RIP (polypeptide B) is selected from the group consisting of Ebulitins, Nigritins, Amarandins, Amaranthus antiviral/RIP, Amaranthin, Atriplex patens RIP, Beta vulgaris RIP, β-vulgin, Celosia cristata RIP, Chenopodium album RIP, CAP30B, Spinacea oleracea RIP, Quinqueginsin, Asparins, Agrostin, Dianthins, DAPs, Dianthus chinensis', Lychnin, Petroglaucin, Petrograndin, Saponaria ocymoides RIP, Vacuolas saporin, Saporins, Vaccaria hispanica RIP, Benincasins, Hispin, Byrodins, Colocins, Cucumis figarei RIP, Melonin, C.moschata RIP, Cucurmosin, Moschatins, Pepocin, Gynostemmin, Gynostemma pentaphyllum RIP, Gypsophilin, Lagenin,

Luffaculin, Luffangulin, Luffin, MORs, Momordin II, Momorcharins, Momorcochin, Momorcochin-S, Sechiumin, Momorgrosvin, Trichoanguin, Kirilowin, α-trichosanthin, TAP-29, Trichokirin, Trichomislin, Trichosanthin, Karasurin, Trichomaglin, Trichobakin, Crotin, Euserratin Antiviral Protein GAP-31, Gelonin, Hura crepitans RIP, Curcin, Jathropa curcas RIP, Mapalmin, Manutins, α-pisavin, Charibdin, Hyacinthus orientalis RIP, Musarmin, Iris hollandica RIP, Cleroendrum aculeatum RIP, CIPs),Crip-31, Bouganin, Bougainvilla spectbilis RIP, Bougainvillea x buttiana Antiviral protein 1 (BBAP1), Malic enzymes, MAP-S, pokeweed antiviral proteins (PAP), PD-SI, DP-S2, Dodecandrin, PIP, PIP2, Phytolacca octandra anti-viral proteins, Hordeum vulgare RIP's, Hordeum vulgare sub sp. Vulgare Translational inhibitor II, Secale cereale RIP, Tritin, Zea diploperemis RIPs, Malus x domestica RIP, Momordica Anti-HIV Protein, Gelonium multiflorum, Mirabilis expansa 1, phage MU1, betavulgin (Bvg), curcin 2, saporin 6, Maize RIP (B-32), Tobacco RIP (TRIP), Beetins, Mirabilis antiviral protein (MAP), Trichosanthin (TCS), luffins, Momorcharins, Ocymoidin, Bryodin, Pepopsin, β-trichosanthin, Camphorin, YLP, Insularin, Barley RIP, Tritins, Lamjarin, and Volvariella volvacea RIP.

10. The fusion protein according to any one of the preceding claims, wherein the CAP (polypeptide C) is selected from the group consisting of Cyclotides, Siamycins, NP-06, Gramicidin A, Circulins, Kalatas, Ginkbilobin, Alpha-Basrubin, Lunatusin, Sesquin, Tricyclon A, Cycloviolacins, Polyphemusins, hfl-B5, Protegrins (Pig Cathelicidin), Rat Defensins, Human ß-defensins, Temporins, Caerins, Ranatuerins, Reptile Defensin, Piscidins, Lactoferricin B, Rabbit Neutrophils, Rabbit α-Defensin, Retrocyclins, Human α-Defensins, Human ß-defensin III (HBD3), Rhesus minidefensin (RTD-1,θ-defensin), rhesus θ-defensins, Human neutrophil peptides, Cecropin As, Melittin, EP5-1, Magainin 2s, hybrid (CE-MA), hepcidin TH1-5, Epinecidin-1, Indolicidin, Cathelicidin-4, LL-37 Cathelicidin, Dermaseptins, Maximins, Brevinins, Ranatuerins, Esculentins, Maculatin 1.3, Maximin H5 and Piscidins, Mundticin KS Enterocin CRL-35, Lunatusin, FK-13 (GI-20 is a derivative), Tachyplesins, Alpha-MSH, Antiviral protein Y3, Palustrin-3AR, Ponericin L2, Spinigerin, Melectin, Clavanin B, Cow cathelicidins, Guinea pig cathelicidin CAP11, Sakacin 5X, Plectasin, Fungal Defensin, GLK-19, lactoferrin (Lf) peptide 2, Alloferon 1, Uperin 3.6, Dahlein 5.6, Ascaphin-8, Human Histatin 5, Guineapig neutrophil peptidess, Mytilins, EP5-1,Hexapeptide (synthetic) Corticostatin IV Rabbit Neutrophil peptide 2, Aureins, Latarcin, Plectasin, Cycloviolins, Varv Peptide E, Palicourein, VHL-1, and Buforins.

11. The fusion protein according to any one of the preceding claims, wherein the Type 1 RIP is MAP30, the CAP a Dermaseptin and the polypeptide A a Retrocyclin.

12. The fusion protein according to claim 11, wherein the Dermaseptin is Dermaseptin 1 and the Retrocyclin in Retrocyclin 101.

13. The fusion protein according to any one of the preceding claims, comprising the amino acid sequence SEQ ID NO:1.

14. The fusion protein according to any one of the preceding claims, suitable for oral administration.

15. An isolated nucleic acid molecule capable of expressing the fusion protein according to any one of claims 1 to 14.

16. A plasmid or vector comprising the nucleic acid molecule according to claim 15.

17. A host cell comprising the nucleic acid molecule according to claim 15 and/or the plasmid or vector according to claim 16.

18. A process of producing a fusion protein according to any one of claims 1 to 14 comprising culturing the host cell according to claim 17 under conditions such that the fusion protein is expressed.

19. A pharmaceutical composition comprising a fusion protein according to any one of claims 1 to 14.

20. The pharmaceutical composition according to claim 19, wherein the composition is suitable for oral administration.

21. The pharmaceutical composition according to either claim 19 or claim 20 further comprising at least one pharmaceutically acceptable carrier, excipient, diluent and/or detergent.

22. The pharmaceutical composition according to claim 21, wherein the detergent is selected from the group consisting of sodium-ursodeoxycholate, sodium glycylursodeoxycholate, potassium-ursodeoxycholate, potassium glycylursodeoxycholate, ferrous-ursodeoxycholate, ferrous glycylursodeoxycholate, ammonium-ursodeoxycholate, ammonium glycylursodeoxycholate, sodium-tauroursodeoxycholate, sodium-N-methylglycylursodeoxycholate, potassium-tauroursodeoxycholate, potassium-N-methyglycylursodeoxy-cholate, ferrous-tauroursodeoxycholate, ferrous-N-methyglycylursodeoxycholate, ammonium-tauroursodeoxycholate, ammonium-N-methyglycylursodeoxycholate, sodium-N-methyltauroursodeoxycholate, potassium-N-methyltauroursodeoxycholate, ferrous-N-methyltauroursodeoxycholate, ammonium-N-methyltauroursodeoxycholate, sodium-cholate, sodium-deoxycholate, potassium-cholate, potassium-deoxycholate, ferrous-cholate, ferrous-deoxycholate, ammonium-cholate, ammonium-

deoxycholate, sodium-chenodeoxycholate, sodium-glycylcholate, potassium-chenodeoxycholate, potassium-glycylcholate, ferrous-chenodeoxycholate, ferrous-glycylcholate, ammonium-chenodeoxycholate, ammonium-glycylcholate, sodium-taurocholate, sodium-N-methylglycylcholate, potassium-taurocholate, potassium-N-methylglycylcholate, ferrous-taurocholate, ferrous-N-methylglycylcholate, ammonium-taurocholate, ammonium-N-methylglycylcholate, sodium-N-methyltaurocholate, sodium-glycyldeoxycholate, potassium-N-methyltaurocholate, potassium-glycyldeoxycholate, ferrous-N-methyltaurocholate, ferrous-glycyldeoxycholate, ammonium-N-methyltaurocholate, ammonium-glycyldeoxycholate, sodium-taurodeoxycholate, sodium-N-methylglycyldeoxycholate, potassium-taurodeoxycholate, potassium-N-methylglycyldeoxycholate, ferrous-taurodeoxycholate, ferrous-N-methyl glycyldeoxycholate, ammonium-taurodeoxycholate, ammonium-N-methylglycyldeoxycholate, sodium-N-methyltaurodeoxycholate, sodum-N-methylglycylchenodeoxycholate, potassium-N-methyltaurodeoxycholate, potassium-N-methylglycylchenodeoxycholate, ferrous-N-methyltaurodeoxycholate, ferrous-N-methylglycylchenodeoxycholate, ammonium-N-methyltaurodeoxycholate, ammonium-N-methylglycylchenodeoxycholate, sodium-N-methyltaurochenodeoxycholate, potassium-N-methyltaurochenodeoxycholate, ferrous-N-methyltaurochenodeoxycholate, ammonium-N-methyltaurochenodeoxycholate, ethyl esters of ursodeoxycholate, propyl esters of ursodeoxycholate, sodium-glycylchenodeoxycholate, potassium-glycylchenodeoxycholate, ferrous-glycylchenodeoxycholate, ammonium-glycylchenodeoxycholate, sodium-taurochenodeoxycholate, potassium-taurochenodeoxycholate, ferrous-taurochenodeoxycholate, ammonium-taurochenodeoxycholate, and sodium deoxycholate.

23. The pharmaceutical composition according to claim 21, wherein the detergent is sodium deoxycholate.

~~24. A method of treating and/or preventing a microbial infection in a vertebrate or invertebrate in need thereof, comprising administering to the vertebrate or invertebrate an effective amount of the fusion protein according to any one of claims 1 to 14 or the pharmaceutical composition according to any one of claims 19 to 23.~~

~~25. The method according to claim 24, wherein the microbial infection is a viral infection.~~

~~26. The method according to either claim 24 or 25, wherein the vertebrate is a mammal, fish or bird.~~

~~27~~24. A fusion protein according to any one of claims 1 to 14 or the pharmaceutical composition according to any one of claims 19 to 23 for use in medicine.

~~28~~25. A fusion protein according to any one of claims 1 to 14 or the pharmaceutical composition according to any one of claims 19 to 23 for use in treating and/or preventing a ~~microbial~~ viral infection in a vertebrate, invertebrate or plant.

~~29. The fusion protein and/or pharmaceutical composition according to claim 28, wherein the microbial infection is a viral infection.~~

~~30~~26. Use of the fusion protein according to any one of claims 1 to 14 or the pharmaceutical composition according to any one of claims 19 to 23 in the preparation of a medicament for the treatment and/or prevention of a ~~microbial~~ viral infection in a vertebrate or invertebrate.

~~31. The use according to claim 30, wherein the microbial infection is a viral infection.~~