Peptide 1 +9.24 Hydrophobicity 0 Net charge

GGGGGGGCGGGGGGCGGGGCGGGGGGGGGCGGGGGGCCGG

Peptide 2 +67.04 Hydrophobicity 0 Net charge

LLLLLLLCLLLLLLCLLLLCLLLLLLLLLCLLLLLLCCLL

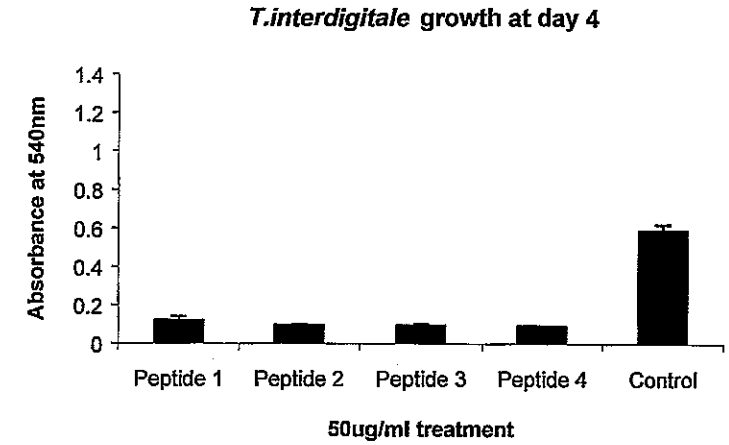
Peptide 3 +38.14 Hydrophobicity 0 Net charge

GLGLGLGCLGLGLGCGLGLCLGLGLGLGLCGLGLGLCCLG

Peptide 4 -27.64 Hydrophobicity +36 Net charge

KRKRKRKCRKRKRRCRKRKCKRKRKRKRKCRKRKRKCCRRKK

Figure 1


T.interdigitale growth at day 4
Absorbance at 540nm
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Peptide 1
Peptide 2
Peptide 3
Peptide 4
Control
50ug/ml treatment

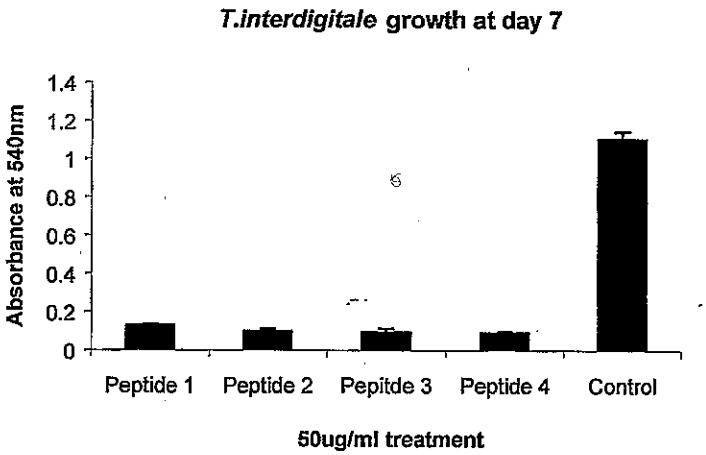
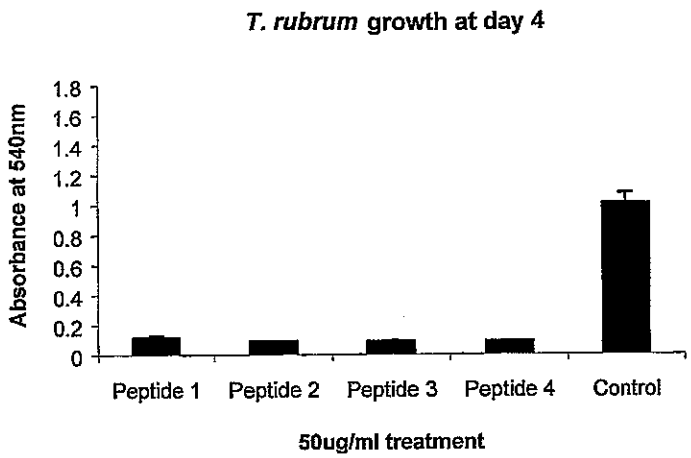

T.interdigitale growth at day 7
Absorbance at 540nm
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Peptide 1
Peptide 2
Pepitde 3
Peptide 4
Control
50ug/ml treatment

Figure 2


T. rubrum growth at day 4
Absorbance at 540nm
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Peptide 1
Peptide 2
Peptide 3
Peptide 4
Control
50ug/ml treatment

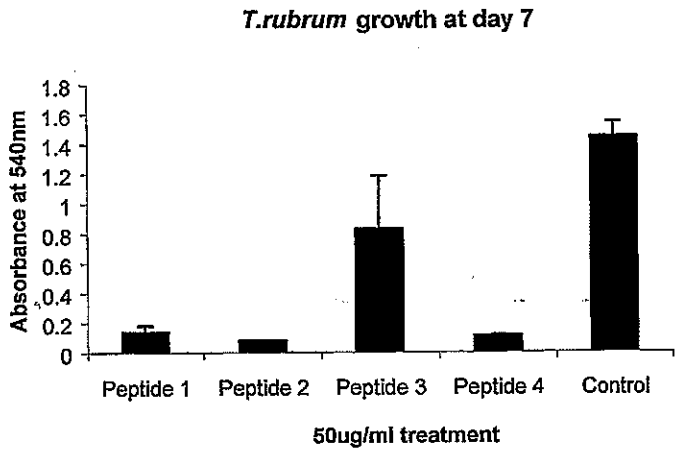
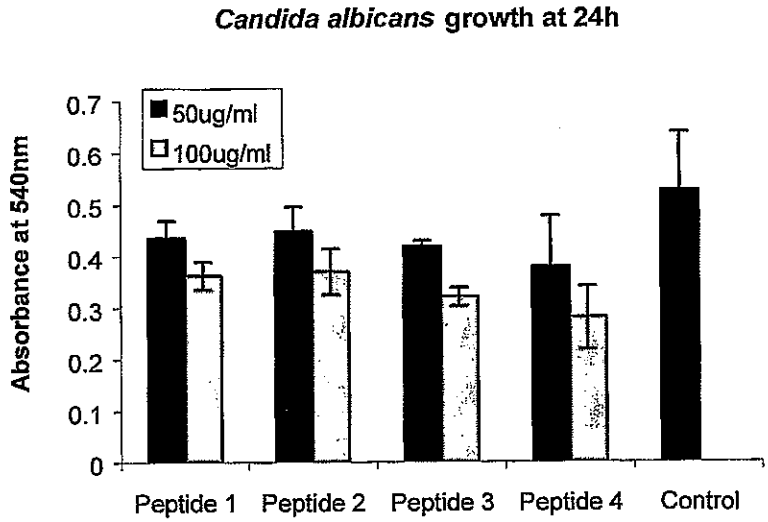

T.rubrum growth at day 7
Absorbance at 540nm
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Peptide 1
Peptide 2
Peptide 3
Peptide 4
Control
50ug/ml treatment

Figure 3


Candida albicans growth at 24h
Absorbance at 540nm
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
50ug/ml
100ug/ml
Peptide 1
Peptide 2
Peptide 3
Peptide 4
Control

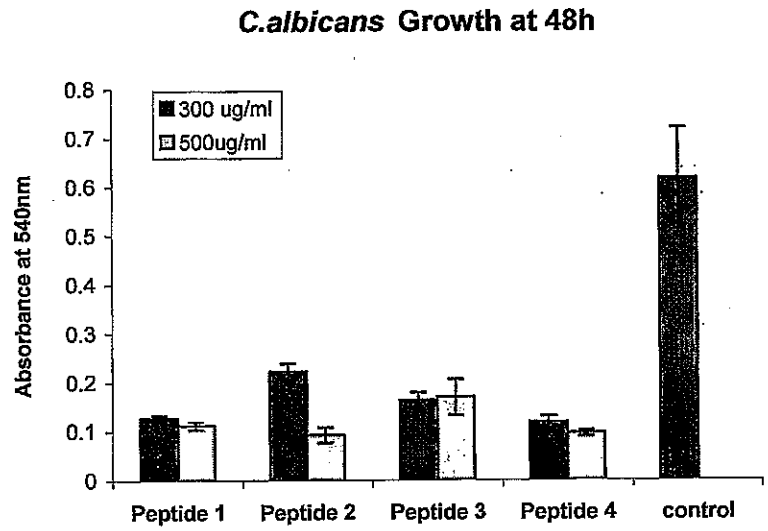

C.albicans Growth at 48h
Absorbance at 540nm
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
300 ug/ml
500ug/ml
Peptide 1
Peptide 2
Peptide 3
Peptide 4
control

Figure 4

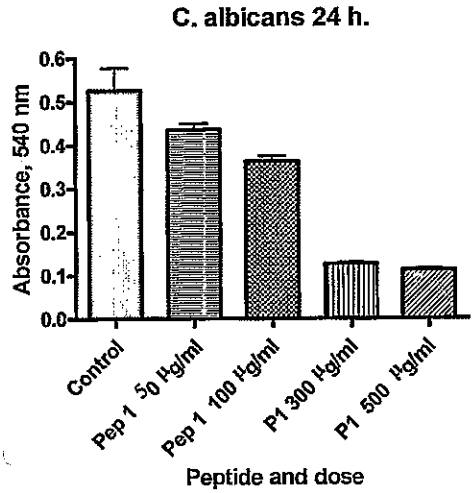

C. albicans 24 h.
Absorbance, 540 nm
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Control
Pep 1 50 µg/ml
Pep 1 100 µg/ml
P1 300 µg/ml
P1 500 µg/ml
Peptide and dose

Figure 5

Figure 6

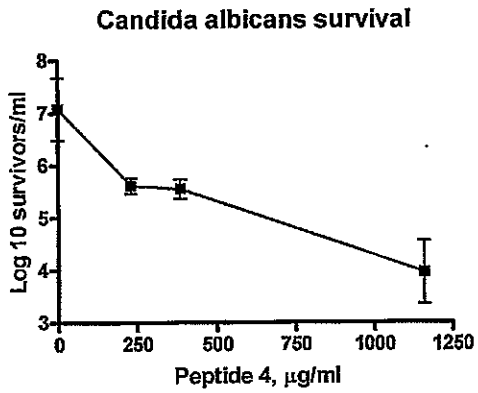
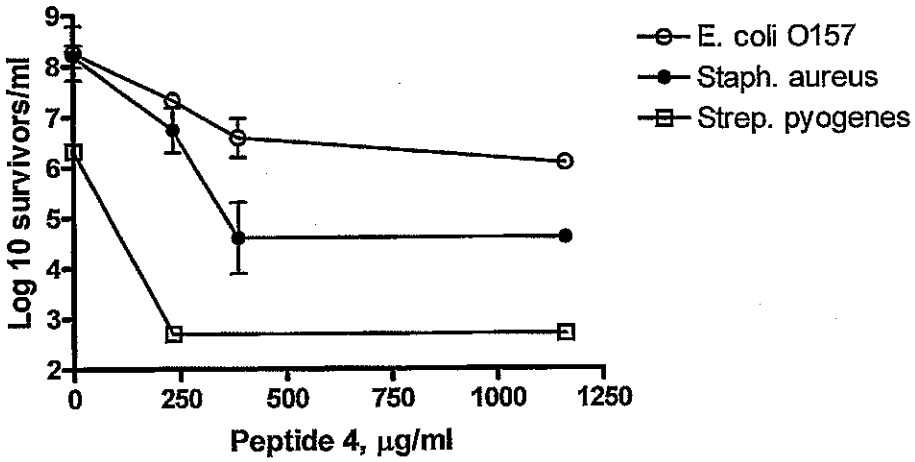

Candida albicans survival
Log 10 survivors/ml
8
7
6
5
4
3
0
250
500
750
1000
1250
Peptide 4, µg/ml

Figure 7


Log 10 survivors/ml
9
8
7
6
5
4
3
2
0
250
500
750
1000
1250
Peptide 4, µg/ml
E. coli O157
Staph. aureus
Strep. pyogenes

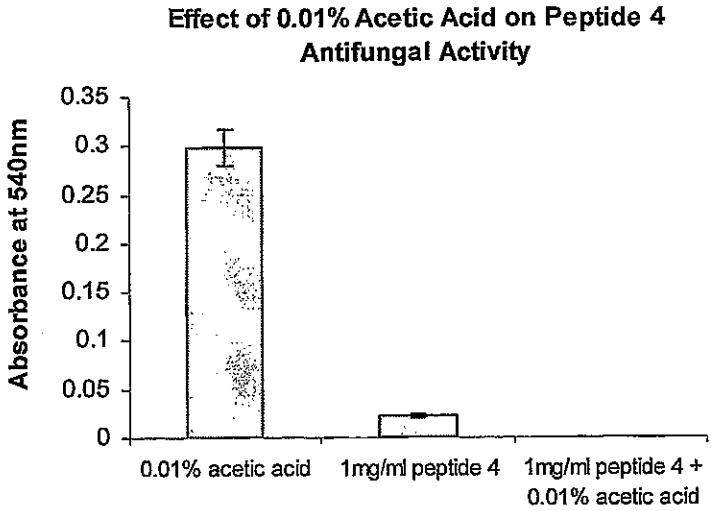

Effect of 0.01% Acetic Acid on Peptide 4 Antifungal Activity
Absorbance at 540nm
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0.01% acetic acid
1mg/ml peptide 4
1mg/ml peptide 4 + 0.01% acetic acid

Figure 8

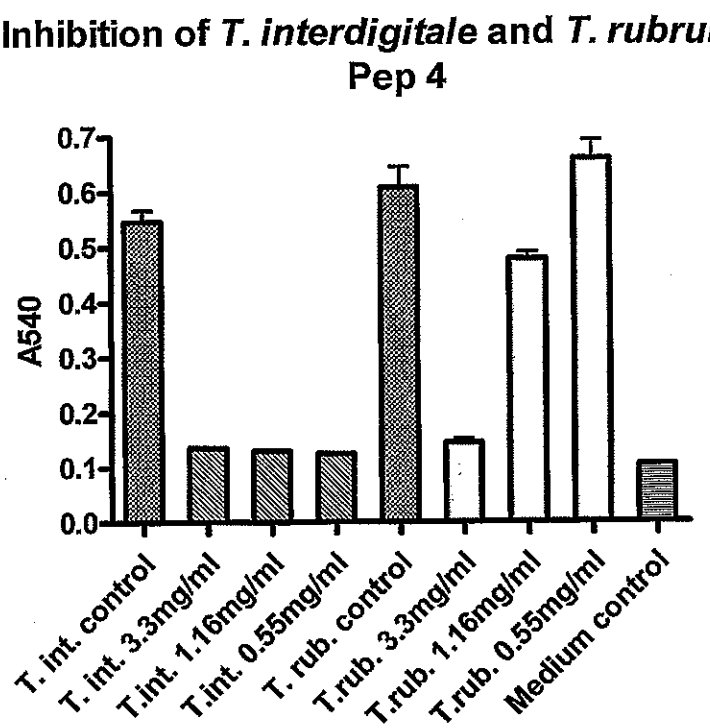

Inhibition of T. interdigitale and T. rubrum by Pep 4
A540
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
T. int. control
T. int. 3.3mg/ml
T.int. 1.16mg/ml
T.int. 0.55mg/ml
T. rub. control
T.rub. 3.3mg/ml
T.rub. 1.16mg/ml
T.rub. 0.55mg/ml
Medium control

Figure 9

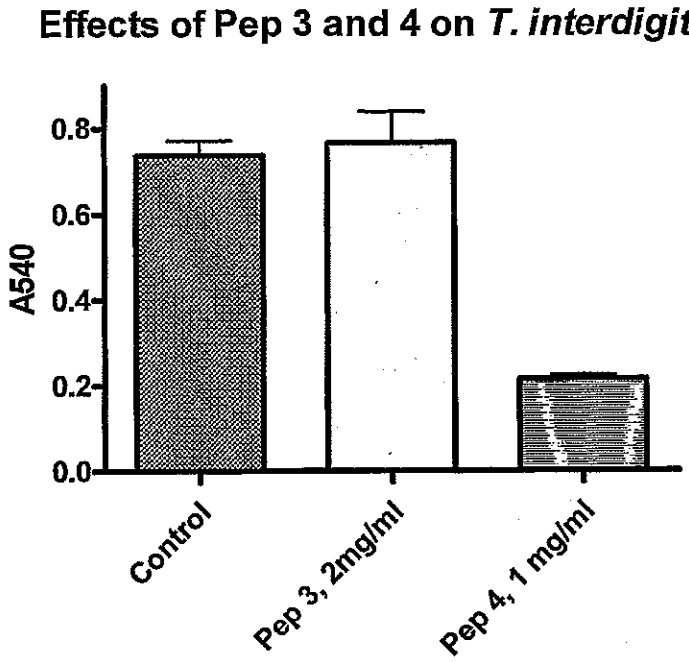

Effects of Pep 3 and 4 on T. interdigitale
A540
0.8
0.6
0.4
0.2
0.0
Control
Pep 3, 2mg/ml
Pep 4, 1 mg/ml

Figure 10

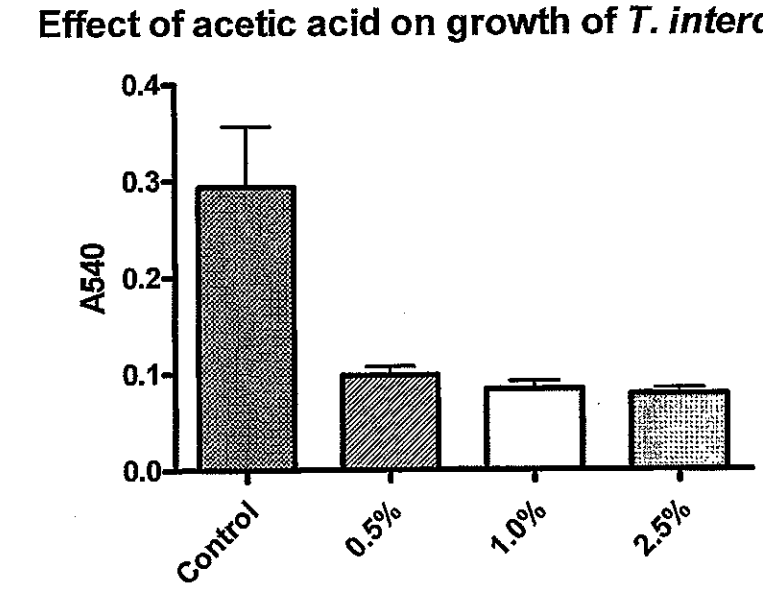

Effect of acetic acid on growth of T. interdigitale
A540
0.4
0.3
0.2
0.1
0.0
Control
0.5%
1.0%
2.5%

Figure 11

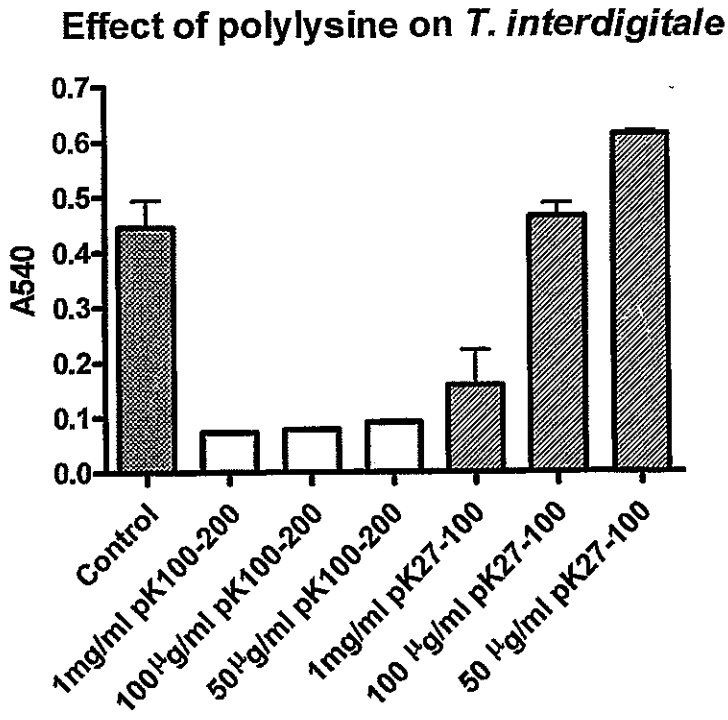

Effect of polylysine on T. interdigitale
A540
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Control
1mg/ml pK100-200
100µg/ml pK100-200
50µg/ml pK100-200
1mg/ml pK27-100
100 µg/ml pK27-100
50 µg/ml pK27-100

Figure 12

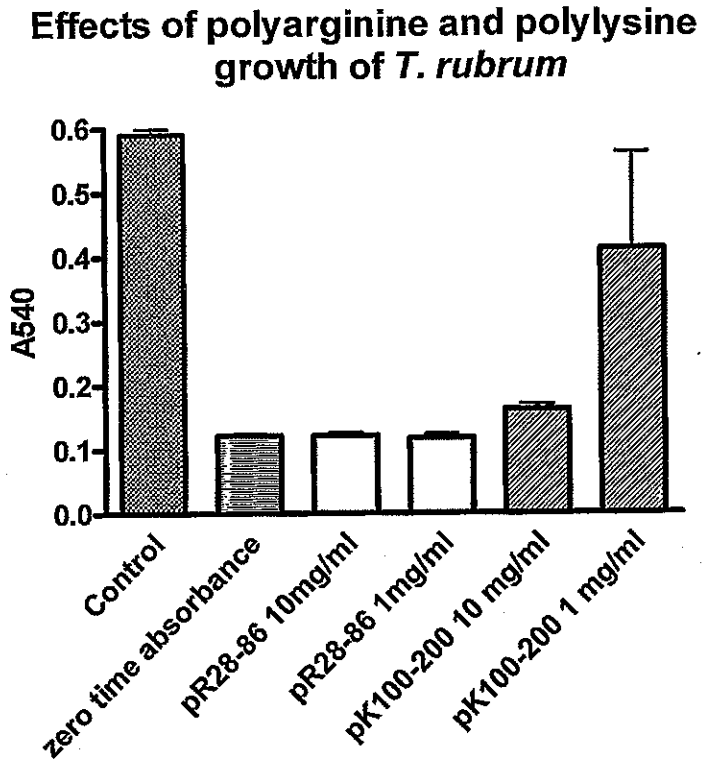

Effects of polyarginine and polylysine on growth of T. rubrum
A540
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Control
zero time absorbance
pR28-86 10mg/ml
pR28-86 1mg/ml
pK100-200 10 mg/ml
pK100-200 1 mg/ml

Figure 13

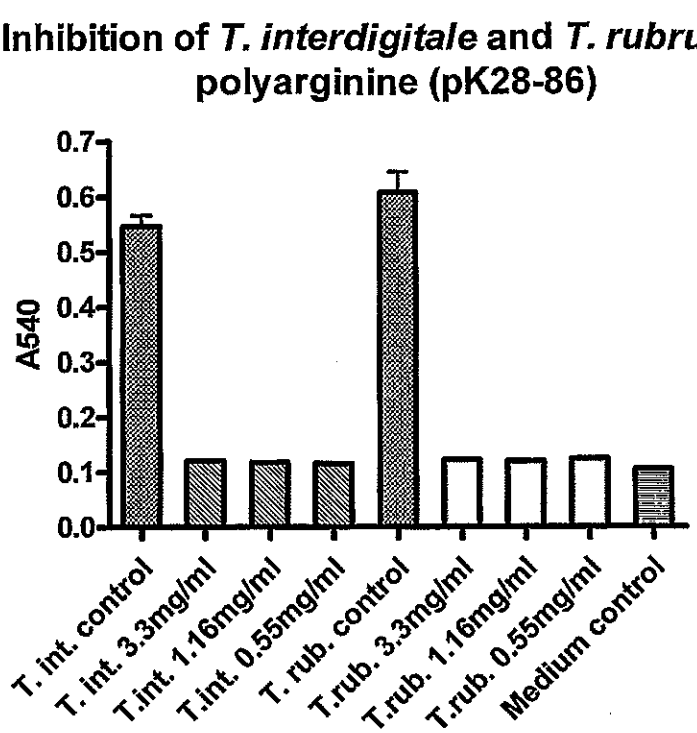

Inhibition of T. interdigitale and T. rubrum by polyarginine (pK28-86)
A540
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
T. int. control
T. int. 3.3mg/ml
T.int. 1.16mg/ml
T.int. 0.55mg/ml
T. rub. control
T.rub. 3.3mg/ml
T.rub. 1.16mg/ml
T.rub. 0.55mg/ml
Medium control

Figure 14

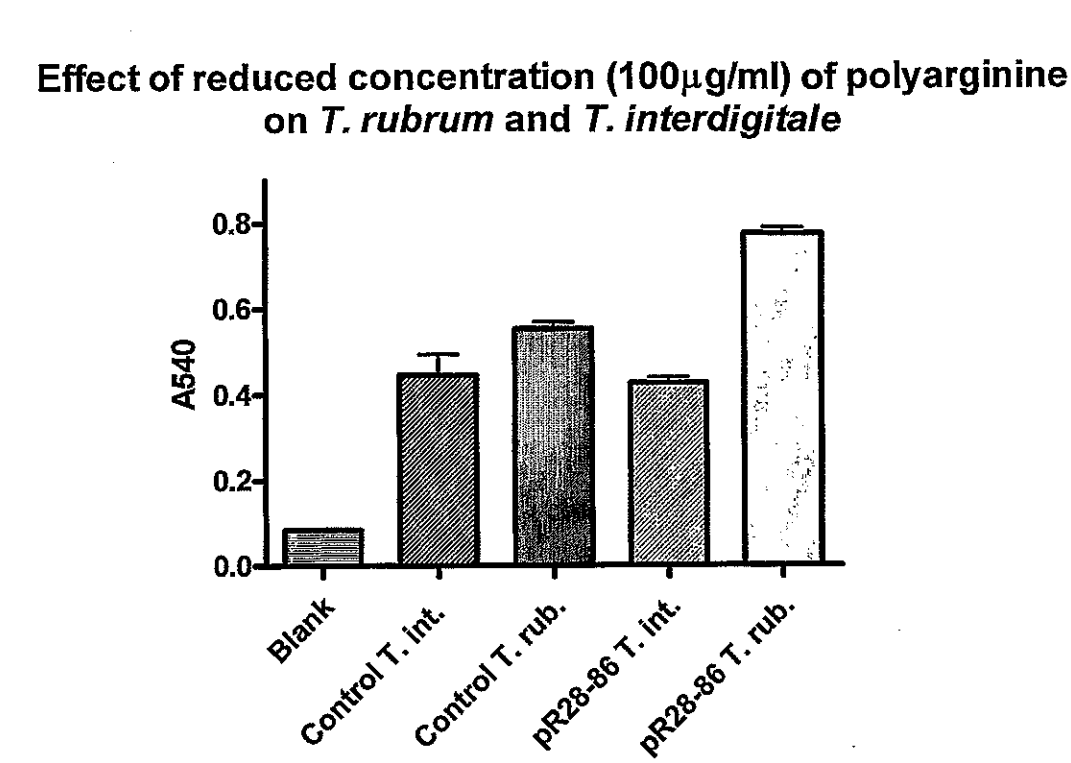

Effect of reduced concentration (100μg/ml) of polyarginine on T. rubrum and T. interdigitale
A540
0.0
0.2
0.4
0.6
0.8
Blank
Control T. int.
Control T. rub.
pR28-86 T. int.
pR28-86 T. rub.

Figure 15

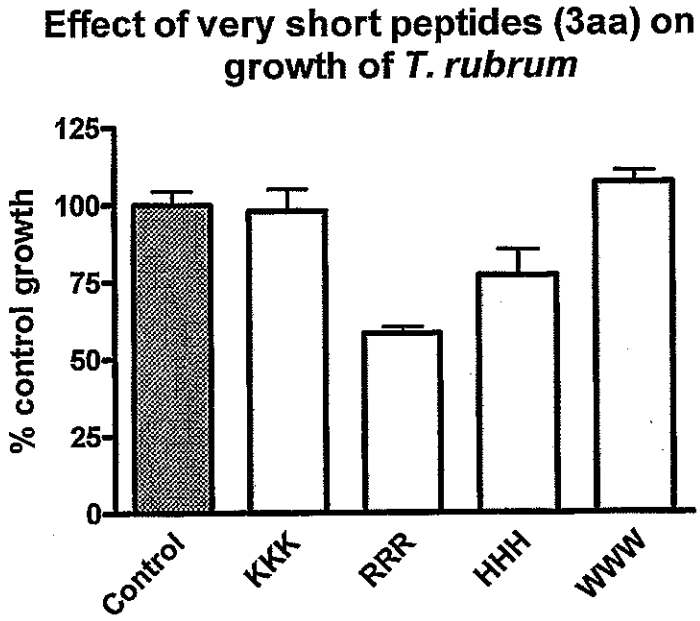

Effect of very short peptides (3aa) on the growth of T. rubrum
% control growth
125
100
75
50
25
0
Control
KKK
RRR
HHH
WWW

Figure 16

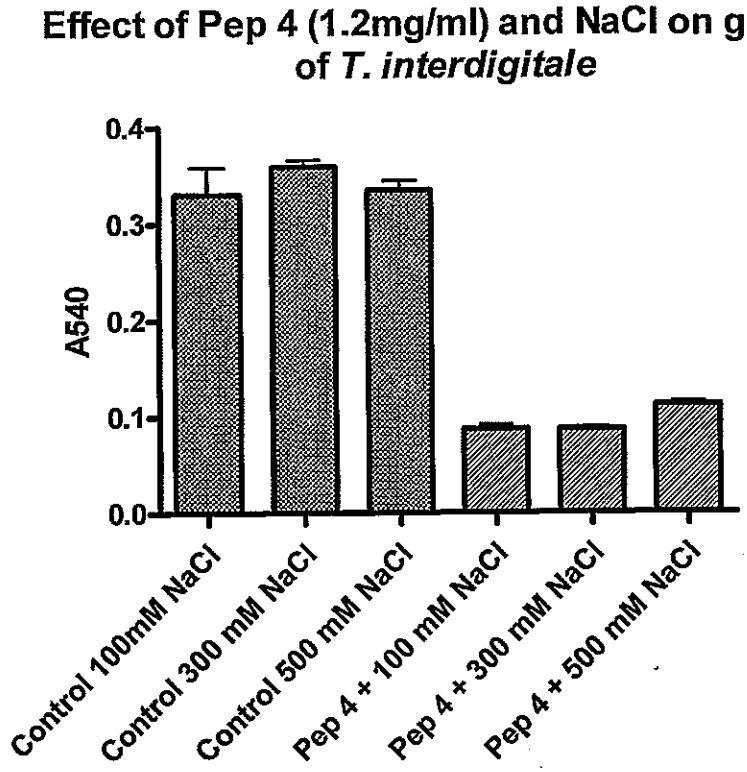

Effect of Pep 4 (1.2mg/ml) and NaCl on growth of T. interdigitale
A540
0.4
0.3
0.2
0.1
0.0
Control 100mM NaCl
Control 300 mM NaCl
Control 500 mM NaCl
Pep 4 + 100 mM NaCl
Pep 4 + 300 mM NaCl
Pep 4 + 500 mM NaCl

Figure 17

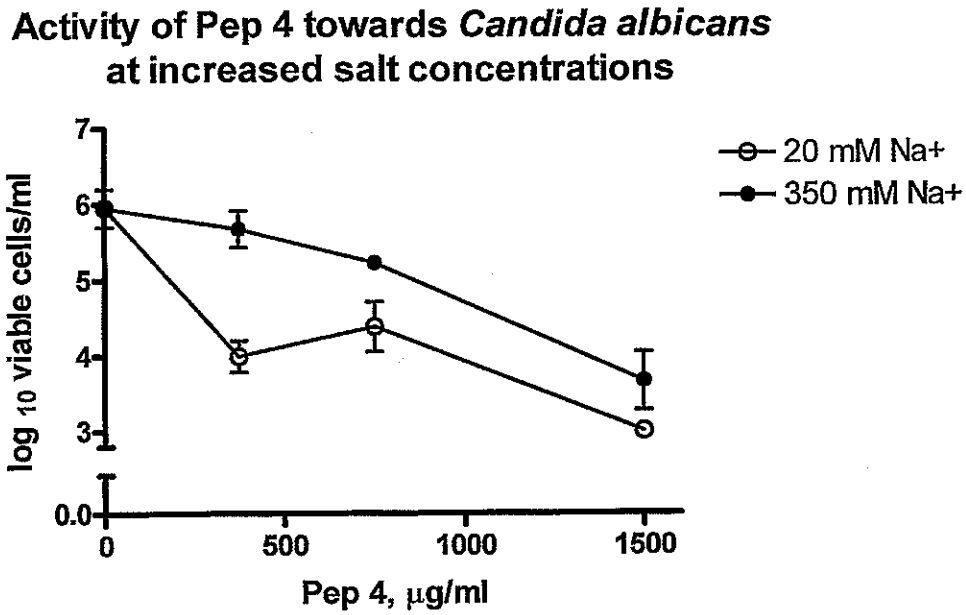

Activity of Pep 4 towards *Candida albicans* at increased salt concentrations
20 mM Na+
350 mM Na+
log 10 viable cells/ml
7
6
5
4
3
0.0
0
500
1000
1500
Pep 4, µg/ml

Figure 18

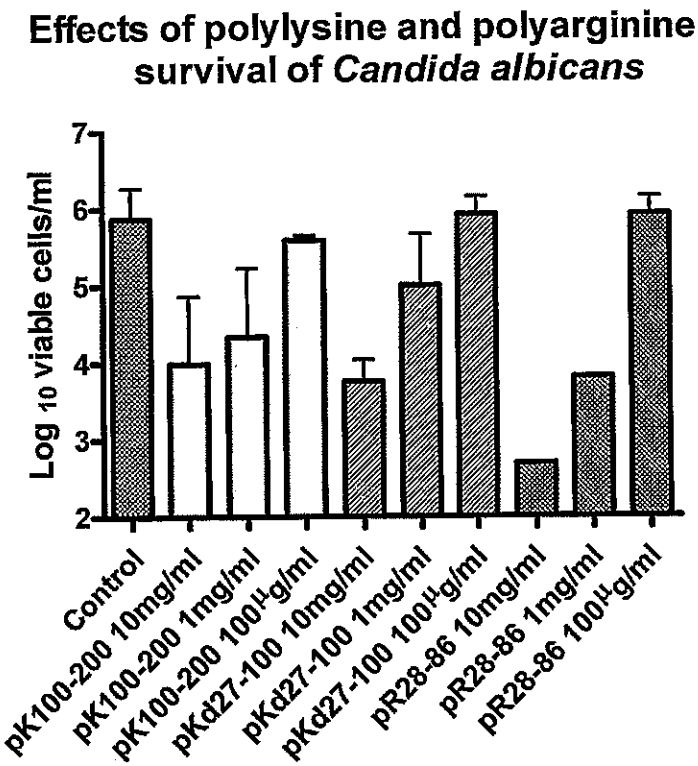

Effects of polylysine and polyarginine on survival of Candida albicans
Log 10 viable cells/ml
7
6
5
4
3
2
Control
pK100-200 10mg/ml
pK100-200 1mg/ml
pK100-200 100µg/ml
pKd27-100 10mg/ml
pKd27-100 1mg/ml
pKd27-100 100µg/ml
pR28-86 10mg/ml
pR28-86 1mg/ml
pR28-86 100µg/ml

Figure 19

Table 1

Non-exclusive list of Human Bacterial Pathogens

Genus	*Species*	*Comments*
Abiotropha	defectiva	
	elegans	
Achromobacter	alcaligenes	
Acidaminacoccus	fermentans	
Acinetobacter	baumannii	
	calcoaceticus	
	lowffii	
	haemolyticus	
Actinobacillus	actinomycetemcomitans	
Actinomadura	madurae	
	pelletieri	
	[illegible]	
Actinomyces	israelii	
	gerencseriae	
	pyogenes	
	naeslundii	
	bernardiae	
	neuii	
	radingae	
	turicensis	
	propinicus	
Aerococcus	urinae	
	viridans	

Aeromonas	hydrophila	
	veroniae	
	caviae	
Alcaligenes	xylososidans	
	denitrificans	
	faecalis	
Anaerovibrio	lipolytica	
Arcanobacterium	pyogenes	
	haemolyticum	
Arthrobacter	globiformis	
	creatinolyticus	
	cumminsii	
	woluwensis	
Bacillus	anthracis	
	cereus	
	brevis	
	subtilis	
	licheniformis	
	macerans	
	alvei	
	megaterium	
	pumilis	
	coagulans	
	laterosporus	
	thuringiensis	
	sphaericus	
	circulans	
Bacteroides	fragilis	
	vulgatus	
	forsythus	
	buccae	

	gingivalis	
	ureolyticus	
	gracilis	
	tectum	
Bartonella	quintana	
	henselae	
	bacilliformis	
	washoensis	
	clarridgeiae	
	elizabethae	
Bordatella/	avium	
Bordetella	hinzii	
	pertussis	
	parapertussis	
	bronchiseptica	
	petrii	
Borrelia	hermsii	
	turicatae	
	burgdorferi	
	recurrentis	
	duttonii	
	garinii	
	afzelii	
	japonica	
	andersonii	
Brachyspira	hyodysenteriae	
	pilosicoli	
Brucella	abortus	
	melitensis	
	suis	
	canis	

Burkholderia	mallei	
	cepacia	
	pseudomallei	
	multivorans	
	stabilis	
	gladioli	
	vietnamiensis	
	ambifaria	
	fungorum	
Calymmatobacterium	granulomatis	
Campylobacter	fetus	
	jejuni	
	coli	
	lari	
	hyointestinalis	
	mucosalis	
	concisus	
	sputorum	
	upsaliensis	
	curvus	
	rectus	
	hominis	
Capnocytophaga	canimorsus	
	gingivalis	
	ochracea	
	cynodegmi	
Cardiobacterium	hominis	
	vulvarum	
Catonella	morbi	
Chlamydia	trachomatis	
	pneumoniae	

	psittaci	
Chryseobacterium	meningosepticum	
Citrobacter	freundii	
	diversus	
Clostridium	botulinum	
	difficile	
	tetani	
	perfringens	
	butyricum	
	diphtheriae	
	sordellii	
	septicum	
	tertium	
	clostridioforme	
	inocuum	
	ramosum	
	coccoides	
Corynebacterium	diphtheriae	
	ulcerans	
	minutissimum	
	pseudotuberculosis	
	pseudodiphtheriticum	
	xerosis	
	jeikeium	
	parvum	
	macginleyi	
	amycolatum	
Coxiella	burnetii	
Dermabacter	hominis	
Desulfovibrio	desulfuricans	

	fairfieldensis	
	vulgaris	
	salexigens	
	africanus	
	gigas	
	baculatus	
	sapovorans	
	baarsii	
	thermophilus	
	gabonensis	
	piger	
	profundus	
	aosterae	
	burkinensis	
	longus	
	orale	
	aespoeensis	
Dialister	pneumocintes	
	invisus	
Dolosicoccus	paucivorans	
Dolosigranulum	pigrum	
Edwardsiella	tarda	
	hoshinae	
Eggerthella	lenta	
Ehrlichia	sennetsu	
	chaffeensis	
	phagocytophila	
	ewingii	
	canis	
Eikinella	corrodens	

Empedobacter	brevis	
Enterobacter	cloacae	
	agglomerans	
	aerogenes	
	sakazakii	
Enterococcus	faecalis	
	faecium	
	gallinarum	
	casseliflavus	
	flavescens	
	gilvus	
	hirae	
	pallens	
	raffinosus	
	solitarius	
Erysipelothrix	rhusiopathiae	
Escherichia	coli	
	fergusonii	
	taylorae	
	hermanii	
	vulneris	
Eubacterium	brachy	
	timidum	
	nodatum	
	saphenum	
	aerofaciens	
	lentum	
Facklamia	languida	
	sourekii	
	ignavia	

	hominis	
Filifactor	alocis	
	villosus	
Flavimonas	oryzihabitans	
Flavobacterium	meningosepticum	
	breve	
	scophthalmum	
	johnsoniae	
Fluoribacter	bozemaniae	
Francisella	tularensis	
	philomiragia	
Fusobacterium	necrophorum	
	nucleatum	
Gardnerella	vaginalis	
Gemella	morbillorum	
	haemolysans	
	bergeriae	
	sanguinis	
Globicatella	sanguis	
	sanguinius	
	sulfidifaciens	
Granulicatella	elegans	
	adiacens	
Haemophilus	influenzae	
	parainfluenzae	
	ducreyi	

	aegyptus	
	paraphrophilus	
	aphrophilus	
Hafnia	alvei	
Helicobacter	pylori	
	cinaedi	
	fennelliae	
	rappini	
	heilman(n)ii	
	pullorum	
	bilis	
	hepaticus	
	westmeadii	
	canadensis	
	typhlonius	
Helococcus	kunzii	
Ignavigranum	ruoffiae	
Inquilinus	limosus	
Kingella	kingae	
	dentrificans	
Klebsiella	pneumoniae	
	agglomerans	
	oxytoca	
[redacted]	[redacted]	
Lactobacillus	rhamnosus	
Lactococcus	lactis	

Legionella	pneumophila	
	anisa	
	sainthelensi	
	birminghamensis	
	micdadei	
	dumofii	
	longbeachae	
	cincinattiensis	
	bozemanii	
	gormanii	
	macehenii	
	tusconensis	
	feelii	
	hackeliae	
	oakridgensis	
	lansingensis	
	israelensis	
	jordansis	
	wadsworthii	
Leptospira	biflexa	
	borgpetersenii	
	interrogans	
	kirschneri	
	noguchii	
	santarosai	
	weilii	
	wolbachii	
	inadai	
	meyeri	
	ivanovii	
Leptotrichia	amnionii	
	buccalis	
	sanguinegans	
Leuconostoc	mesenteroides	

	pseudomesenteroides	
Listeria	monocytogenes	
	ivanovii	
Megasphaera	micronuciformis	
	elsdenii	
Micrococcus	luteus	
Micropolyspora	faeni	
Mobiluncus	mulieris	
	curtisii	
Moraxella	lacunata	
	nonliquefaciens	
	catarrhalis	
	influenzae	
Morganella	morganii	
Mycobacterium	tuberculosis	
	ulcerans	
	avium	
	intracellulare	
	marin(ar)um	
	leprae	
	kansasii	
	scrofulaceum	
	chelonae	
	bovis	
	africanum	
	microtii	
	fortuitum	
	hominis	
	pneumoniae	

	malmoense	
	paratuberculosis	
	simiae	
	szulagi	
	xenopi	
Mycoplasma	pneumoniae	
	genitalium	
	hominis	
	pulmonis	
	caviae	
Myroides	odoratus	
	odoratimimus	
Neisseria	meningitides	
	gonorrhoeae	
	lactamica	
	mucosa	
Nocardia	caviae	
	asteroides	
	brasiliensis	
	vaccinii	
	africana	
	veterana	
	arthritidis	
	anaemiae	
	farcinica	
	nova	
	otitidiscaviarum	
Orientia	tsutsugamuchi	
Pandoraea	pneumonicola	
	sputorum	
	apista	

	pnomenusa	
Pasteurella	multocida	
	pneumotrophica	
	bettyae	
	canis	
	dagmatis	
	gallinarum	
	haemolytica	
	stomatis	
Pediococcus	acidilactici	
	pentosaceus	
Peptostreptococcus	magnus	
	anaerobius	
	micros	
	vaginalis	
	asaccharolyticus	
	tetradius	
	prevotii	
Photorhabdus	luminescens	
	asymbiotica	
Plesiomonas	shigelloides	
(Plesiomonas)		
Porphyromonas	gingivalis	
	levii	
	uenonsis	
Prevotella	melaninogenica	
	intermedia	
	bivia	
	heparinolytica	
	nigrescens	

	oris	
	disiens	
Propionibacterium	acnes	
	propionicus	
Proteus	mirabilis	
	vulgaris	
	penneri	
Providencia	alcalifaciens	
	rettgeri	
	stuartii	
Pseudomonas	aeruginosa	
	fluorescens	
	putida	
	mendonica	
	alcaligenes	
	pickettii	
	maltophila	
	cepacia	
	mallei	
	pseudomallei	
	oryzihabitans	
	stutzeri	
	putrefaciens	
Ralstonia	picketii	
	mannitolilytica	
Rhizobium	radiobacter	
	massiliae	
Rhodococcus	equi	
Rickettsia	tsutsugamuchi	

	conorii	
	prowazekii	
	rickettsii	
	akari	
	japonica	
	austral(ens)is	
	typhi	
	monogolotimonae	
	felis	
	parkeri	
	helvetica	
	canada	
	montana	
	sennetsu	
Rochalimaea	quintana	
Roseomonas	gilardii	
	fauriae	
	mucosa	
Rothia	dentocariosa	
Salmonella	typhi	
	arizonae	
	enteritidis	
	paratyphi	
	typhimurium	
	enterica	
	dublin	
	choleraesuis	
Selenomonas	sputagena	
Serpulina	hyodysenteriae	
	pilosicoli	
	murdochii	

Serratia	marcesans	
	liquefaciens	
Shigella	flexneri	
	boydii	
	dysenteriae	
	sonnei	
Sneathia	sanguinegens	
Staphylococcus	aureus	
	epidermidis	
	saphrophyticus	
	lugdunensis	
	haemolyticus	
	warneri	
	schleferi	
	intermedius	
Stenotrophomonas	maltophilia	
Streptobacillus	moniliformis	
Steptococcus	pneumoniae	
	gordonii	
	gallolyticus	
	pyogenes	
	mutans	
	sanguis	
	iniae	
	agalactiae	
	faecalis	
	suis	
	equisimilis	
	bovis	
	salivarius	

	mitis	
	milleri *group*	
	Group A, B, C, D, F, G, R	
	A, β, γ type	
Streptomyces	somaliensis	
Streptophomonas	maltophila	
Thermoactinomyces	sacchari	
	vulgaris	
	dichotomicus	
Thermomonospora	viridis	
Treponema	carateum	
	pallidum	Including subsp. Pertenue & endemicum
	pertenue	
	denticola	
[illegible]	[illegible]	
Ureaplasma	urealyticum	
	parvum	
Vagococcus	fluvialis	
Veillonella	montpellierensis	
	parvula	
	alcalescens	
Weisella	confusa	
	cibaria	
Vibrio	cholerae	
	parahaemolyticus	

	vulnificus	
	alginolyticus	
	mimicus	
	hollisae	
	fluvialis	
	damsella	
	furnisii	
	metchnikovii	
Yersinia	pestis	
	enterocolitica	
	pseudotuberculosis	

Table 1 (cont'd)

Non-exclusive list of Human Fungal Pathogens

Genus	*Species*	*Comments*
Absidia	corymbifera	
Acremonium	Falciforme	
	kiliensis	
	recifei	
Apophysomyces	elegans	
Ajellomyces	Dermatitidis	
	Capsulatus	
Alternaria	alternata	
Arthroderma	vanbreuseghemii	
Arthrographis	kalrae	
	Grisea	
	cuboidea	
Aspergillus	Fumigatus	
	Ochraceus	
	Versicolor	
	Flavus	
	terreus	
	glaucus	
	Nidulans	
	niger	
	Oryzae	
	flavatus	
	ustus	
Basidiobolus	Ranarum	
	Meristosporus	
	haptosporus	
Beauveria	bassiana	
Bipolaris	spicifera	
	Australiensis	
	hawaiiensis	
Blastomyces	Dermatitidis	
	brasiliensis	
Blastoschizomyces	capitatum	

Candida	Albicans	
	Tropicalis	
	Glabrata	
	parapsilosis	
	krusei	
	zeylanoides	
	guillermondii	
	pelliculosa	
	Kefyr	
	dubliniensis	
Chrysosporium	Keratinophilum	
	Tropicum	
	Merdarium	
	Inops	
	Pannicola	
	Queenslandicum	
	Zonatum	
	parvum	
Cladophialophora	Bantiana	
	carrionii	
Cladosporium	Bantianum	
	Caldosporiodes	
Coccoides	Immitis	
Conidiobolus	coronatus	
Coniothyrium	fuckelii	
Cryptococcus	neoformans	Var neoformans & gattii & grubii
	Albidus	
	laurentii	
Cunninghamella	bertholletiae	
Curvularia	Brachyspora	
	Clavata	
	Geniculata	
	Lunata	
	Pallescens	
	Senegalensis	
	verruculosis	
Emmonsia	Parva	Var parva & crescens
Epidermophyton	Floccosum	
	rubrum	
	stockdaleae	
	gallinae	

Exophiala	jeanselmiae	
	dermatitidis	
Exserohilum	Rostratum	
	Halodes	
	meginnisii	
	longirostratum	
Filobasidiella	neoformans	Var neoformans & gattii
Fonsecaea	Compacta	
	Pedrosoi	
Fusarium	oxyporum	
	solani	
Geotrichium	candidum	
Histoplasma	Capsulatum	Var capsulatum, dubiosii & farcinimosum
Lacazia	loboi	
Lasiodiplodia	theobromae	
Leptosphaeria	senegalensis	
Loboa	loboi	
Madurella	Grisea	
	mycetomatis	
Malassezia	furfur	
Microsporum	gypseum	
	Audoinii	
	canis	
	Nanum	
	Fulvum	
	ferrugineum	
	distortum	
Mucor	Ramosissimus	
	Indicus	
	circinneloides	
	hiernalis	
Neotestudina	Rosatii	
Nocardiopsis	dassonvillei	
Ochroconis	gallopava	
Onchyocola	canadiensis	

Paecilomyces	crustaceus	
	variotii	
Paracoccidiomyces	brasiliensis	
Paracoccidioides	Brasiliensis	
Penicillium	Marneffei	
	verrucosum	
Phaeoannellomyces	werneckii	
Phialophora	verrucosa	
	Repens	
	parasitica	
Phoma	Cruris-hominis	
Piedaria	Hortae	
(Piedra)	(iahortae)	
Pneumocystis	carinii	
	Jiroveci(i)	
Pseudallescheria	Boydii	
Pyrenochaeta	romeroi	
Rhinosporidium	seeberi	
Rhizomucor	pusillus	
Rhizopus	arrhizus	
Rhodotorula	Rubra	
	Minuta	
	Glutinis	
	mucilaginosa	
Saccharomyces	cerevisiae	
	Boulardii	
Scedosporium	Apiospermum	
	Proliferans	
	Inflatum	
Scopulariopsis	brevicaulis	
Schizophyllum	commune	
Scytalidium	Dimidiatum	
	hyalinum	

Sporobolomyces	salmonicolor	
Sporothrix	Schenckii	
Stachybotrys	Chartarum	
	Atra	
	alternans	
Synchephalastrum	racemosum	
Trichoderma	longibrachiatum	
Trichophyton	Rubrum	Including var nigricans & granular
	Interdigitale	
	Mentagrophytes	Including var interdigitale & goetzii
	Violaceum	
	Tonsurans	
	schoenleinii	
	Megninii	
	concentricum	
	Sourdanense	
	gourvilii	
	verrucosum	
	terrestre	
Trichosporon	beigleii	
Ulocladium	botyris	
	chartarum	
Ustilago	maydis	
Verticillium	affinae	
	Albo-atrum	
	fusisporum	
	luteoalbum	
Wangiella	dermatitidis	
Xylohypha	Bantiana	

Table 1 (cont'd)

Non-exclusive list of Human Parasitic Pathogens

Genus	*Species*	*Comments*
Acanthamoeba	castellanii	
	culbertsoni	
Ancylostoma	duodenale	
Angiostrongylus	cantonensis	
	costaricensis	
Anisakis	simplex	
Ascaris	lumbricoides	
	suum	
Babesia	divergens	
	microti	
	Equi	
Balamuthia	mandrillaris	
Balantidium	coli	
Blastocystis	hominis	
Brugia	malayi	
	pahangi	
	timori	
Capillaria	philipinensis	
Clonorchis	sinensis	
	viverrini	
Contracaecum	osculatum	
Cryptosporidium	parvum	
Cyclospora	cayetanensis	
Dicrocoelium	dendriticum	
Dientamoeba	fragilis	
Diphyllobothrium	latum	
Dirofilaria	immitis	

Dracunculus	medinensis	
Echinococcus	granulosus	
	multilocaris	
	vogeli	
Entamoeba	histolytica	
Enterobius	vermicularis	
Enterocytozoon	bieneusi	
Fasciola	gigantica	
	hepatica	
	buski	
Giardia	lamblia	
	intestinalis	
Heterophyes		
Hymenolepis	diminuta	
	nana	
Isospora	belli	
Leishmania	aethipoica	
	brasiliensis	
	donovani	
	mexicana	
	peruviana	
	major	
	tropica	
	amazonensis	
	panamensis	
	guyanensis	
	infantum	
	chagasi	
Loa	loa	
Mansonella	ozzardi	
	perstans	
	streptocerca	
Naegleria	fowleri	
Necator	americanus	
Onchocerca	volvulus	
Opisthorcis	felineus	
	sinensis	
	viverinni	

Paragonimus	westermani	
Plasmodium	falciparum	
	vivax	
	Malariae	
	ovale	
Pneumocystis	carinii	
Pseudoterranova	decipiens	
Rhinosporidium	seeberi	
Sarcocystis	suihominis	
Schistosoma	haematobium	
	intercalatum	
	japonicum	
	mansoni	
	mekongi	
Spirostomum	teres	
Strongyloides	stercoralis	
Taenia	saginata	
	solium	
Theileria	parva	
Toxocara	canis	
	cati	
Toxoplasma	gondii	
Trichinella	native	
	nelsoni	
	spiralis	
	psuedospiralis	
Trichomonas	vaginalis	
Trichostrongylus	orientalis	
Trichuris	trichiura	
Trypanosoma	cruzi	
	brucei brucei	
	brucei gambiense	
	brucei rhodesiense	
Wuchereria	bancrofti	

Table 1 (cont'd)

Non-exclusive list of Human Enveloped Viral Pathogens

<u>Enveloped virus:</u> A virus having an outer lipoprotein bi-layer acquired by budding through the host cell membrane.

Virus	Disease	Comments
TOGAVIRIDAE		
Alphaviruses:		
Eastern equine encephalomyelitis	Fever, malaise, headaches, encephalitis	
Western equine encephalomyelitis	Fever, malaise, headaches, encephalitis	
Venezuelan equine encephalomyelitis	Fever, malaise, headaches, encephalitis	Includes Mucambo, Everglades, Tonate, Pixuna, Cabassou virus/fever
Ross river	Fever, rash, arthralgia	
Chikungunya	Fever, rash, arthralgia, arthritis	
Mayaro	Fever, rash, arthralgia	
O'nyong'nyong	Fever, rash, arthralgia	
Sindbis	Fever, rash, arthralgia	Ockelbo, Karelian & Pogosta fevers
Ndumu		
Middleburg		
Bebaru		
Sagiyama		
Sem(i)liki forest		
Getah		
Rubiviridae:		

Rubella	German Measles	
Flaviviruses:		
Yellow fever	hepatitis with a hemorrhagic diathesis	high fever, chills, headache, muscle aches, vomiting, and backache, shock, bleeding, and kidney & liver failure
Dengue (types 1, 2, 3 & 4)	immunopathologic disease (shock & haemorrhage)	Dengue fever or Dengue hemorrhagic fever
St Louis Encephalitis	encephalitis	
Japanese Encaphalitis	Encephalitis	
Murray Valley Encaphalitis	Encephalitis	
Russian Spring Summer Encaphalitis	Encephalitis	Tick-borne
Tick-borne encephalitis	Encephalitis	
Kyanasur forest disease	encephalitis	Tick-borne
Powassan	Hemorrhagic fever	Tick-borne
Hepatitis C		
Hepatitis G		
Israel Turkey Meningitis	Meningitis	
Rocio		
Sal Vieja		
San Perlita		
Spondweni		
Wesselsbron		
West Nile Fever		
Absettarov		Tick-borne
Hanzalova		Tick-borne
Hypr		Tick-borne
Kumlinge		Tick-borne

Louping ill		Tick-borne
Negishi		Tick-borne
Omsk		Tick-borne
BUNYAVIRIDAE		
Bangui	Fever, rash	
Bhanja	Fever, encephalitis	
Issk-kul	Fever	
Kasokero	Fever	
Nyando	Fever	
Tamdy	Fever	
Tataguine	Fever	
Wanowrie	Fever, hemorrhage	
Bunyaviruses:		
Akabene		
Bunyamwera	Fever	Bunyamwera, Germiston, Ilesha, Shokwe, Tensaw, Wyeomyia
Bwamba	Fever	Bwamba, Pongola
C	Fever	Apeu, Caraparu, Itaqui, Madrid, Marituba, Murutucu, Nepuyo, Oriboca, Ossa, Restan
California	Fever &/or Encephalitis	California encephalitis, Guaroa, Inkoo, La Crosse, Snowshoe hare, Jamestown Canyon, Tahyna
Guama	Fever	Catu, Guama

Simbu	Fever	Shuni, Oropouche
Phleboviridae:		
Phlebotomous fever	fever	Alenquer, Candinu, Chagres, Naples, Punto Toro, Rift Valley Fever, Sicilian, Toscana
Sandfly fever		
Nairoviridae:		
Crimean-Congo	Hemmorhagic fever	
Nairobi Sheep Disease	Fever	
Hazara		
Hantaviridae:		
Hantaan	Hemorrhagic fever with renal syndrome or Hantavirus Pulmonary Syndrome	Hantaan (Korean haemorrhagic fever), Puumala, Seoul, Sin Nombre (Muerto Canyon), New York, Black Creek Canal
Belgrade (Dobrava)		
Prospect Hill		
ARENAVIRIDAE		
LCM-Lassa-virus-complex (Old World Arenaviruses)		Ippy, Lassa Fever, Lymphotic choriomeningitis, Mobala, Mobeia
Tacaribe-virus-complex		Ampari, Flexal,

		Guanarito, Junin, Latino, Machupo, Parana, Pichinde, Sabia, Tamiami
ORTHOMYXOVIRIDAE		
Influenza		Types A, B & C
Dhori		Tick-borne
Thogoto		Tick-borne
PARAMYXOVIRIDAE		
Rubulavirus		Newcastle Disease
Nipah		
Hendra		Equine morbillivirus
Human metapneumonovirus		
Paramyxovirus:		
Mumps		
Parainfluenza	mild, febrile common cold to severe, potentially life-threatening croup, bronchiolitis, and pneumonia	Types 1-4 (4 is sub-divided into A & B)
Pneumovirus:		
Respiratory Synctial Virus		Types A & B
Morbillivirus:		
Measles		
CORONAVIRIDAE		

Coronavirus	Cold	
SARS	Severe acute respiratory syndrome	
RHABDOVIRIDAE		
Piry		
Lyssaviridae:		
Rabies	Rabies	
Lagos Bat		
Mogola		
Duvenhage		
European Bat Lyssavirus		
Vesiculovirus:		
Vesiculovirus	Vesicular Stomatitis	Types 1-4
RETROVIRIDAE		
Oncoviridae:		
Human T-cell Leukaemia	lymphoproliferative and neurologic disorders	Types 1, 2 & 5
Kaposi's sarcoma-associated herpesvirus		
Lentiviridae:		
Human Immunodeficiency Virus	AIDS	Types 1 & 2
Simian Immunodeficiency Virus		

Spumaviridae:		
Human Foamy Virus		
HERPESVIRIDAE		
Herpes simplex	Genital & oral herpes	Types 1 & 2
Varicella-zoster virus	Chicken Pox	
Cytomegalovirus	hepatosplenomegaly, retinitis, rash, and central nervous system involvement & possibly mononucleosis	
Epstein-Barr virus	Mononucleosis	
Human herpesvirus	exanthem subitem (roseola)	Types 6 & 7
Kaposi's Sarcoma virus	Kaposi's sarcoma	Human herpesvirus type 8
B virus	encephalitis	
FILOVIRIDAE		
Ebola Reston	multiple hemorrhagic manifestations, marked hepatic involvement, disseminated intravascular coagulation, and shock	
Ebola Siena		
Ebola Sudan		
Ebola Zaire		
Marburg		

Table 2

Amino acid polymer codes

KKK - L-Lysine trimer

RRR - L-Arginine trimer

HHH - L-Histidine trimer

WWW - L-Tryptophan trimer

pK3-14 - Poly-L-lysine-HBr 500-2,000Da (3-14aa)

pK7-27 - Poly-L-lysine-HBr 1,000-4,000Da (7-27aa)

pK100-200 - Poly-L-lysine-HCl 15,000-30,000Da (100-200aa)

pKd27-100 - Poly-D-lysine-HBr 4,000-15,000Da (27-100aa)

pR28-86 - Poly-L-arginine-HCl 5,000-15,000 (28-86aa)