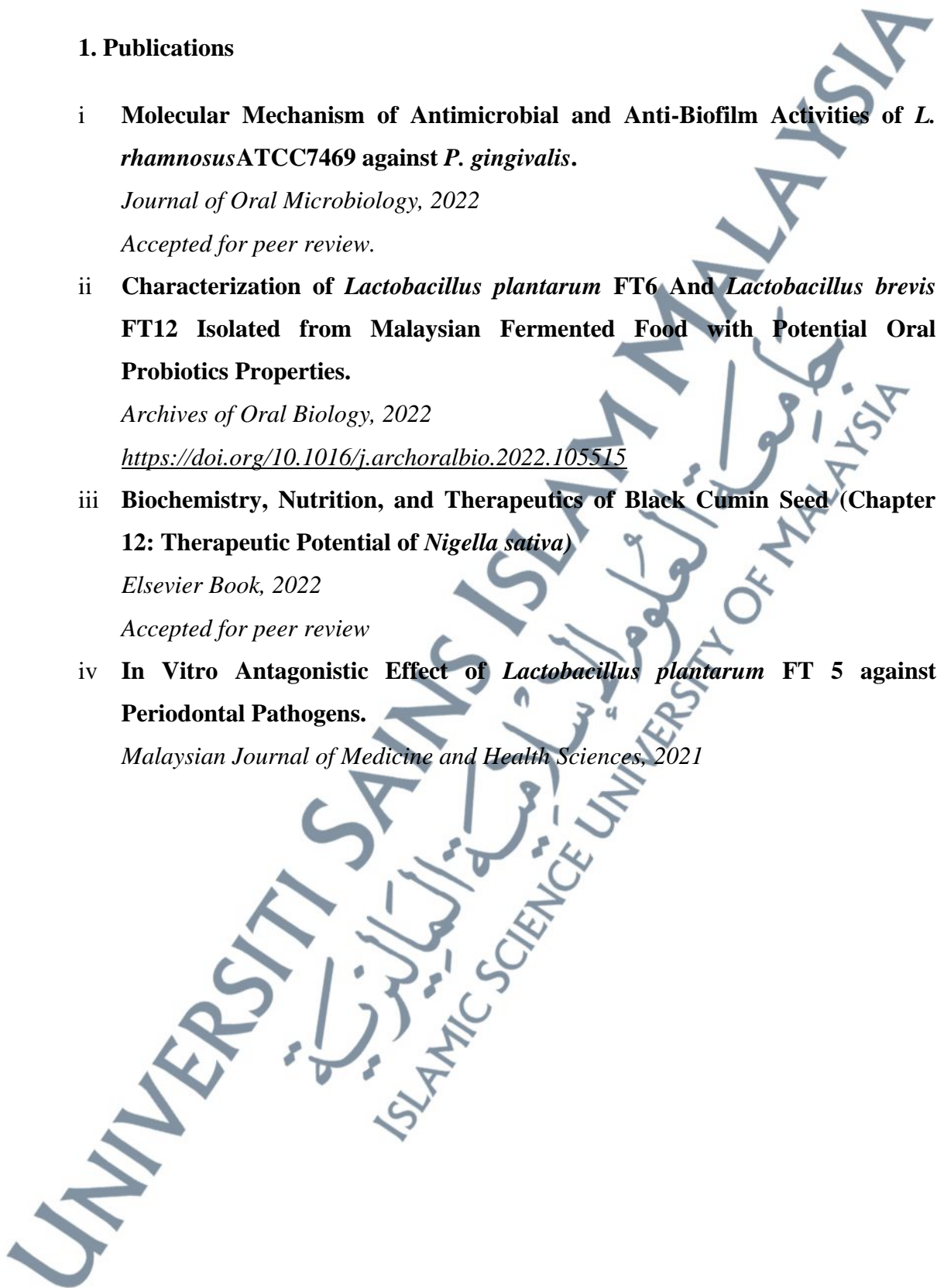


## PUBLICATIONS

### 1. Publications

- i **Molecular Mechanism of Antimicrobial and Anti-Biofilm Activities of *L. rhamnosus* ATCC7469 against *P. gingivalis*.**  
*Journal of Oral Microbiology*, 2022  
*Accepted for peer review.*
- ii **Characterization of *Lactobacillus plantarum* FT6 And *Lactobacillus brevis* FT12 Isolated from Malaysian Fermented Food with Potential Oral Probiotics Properties.**  
*Archives of Oral Biology*, 2022  
<https://doi.org/10.1016/j.archoralbio.2022.105515>
- iii **Biochemistry, Nutrition, and Therapeutics of Black Cumin Seed (Chapter 12: Therapeutic Potential of *Nigella sativa*)**  
*Elsevier Book*, 2022  
*Accepted for peer review*
- iv **In Vitro Antagonistic Effect of *Lactobacillus plantarum* FT 5 against Periodontal Pathogens.**  
*Malaysian Journal of Medicine and Health Sciences*, 2021



## APPENDICES

### APPENDIX A: RESEARCH METHODOLOGY

Figure A1: Methodology outline.

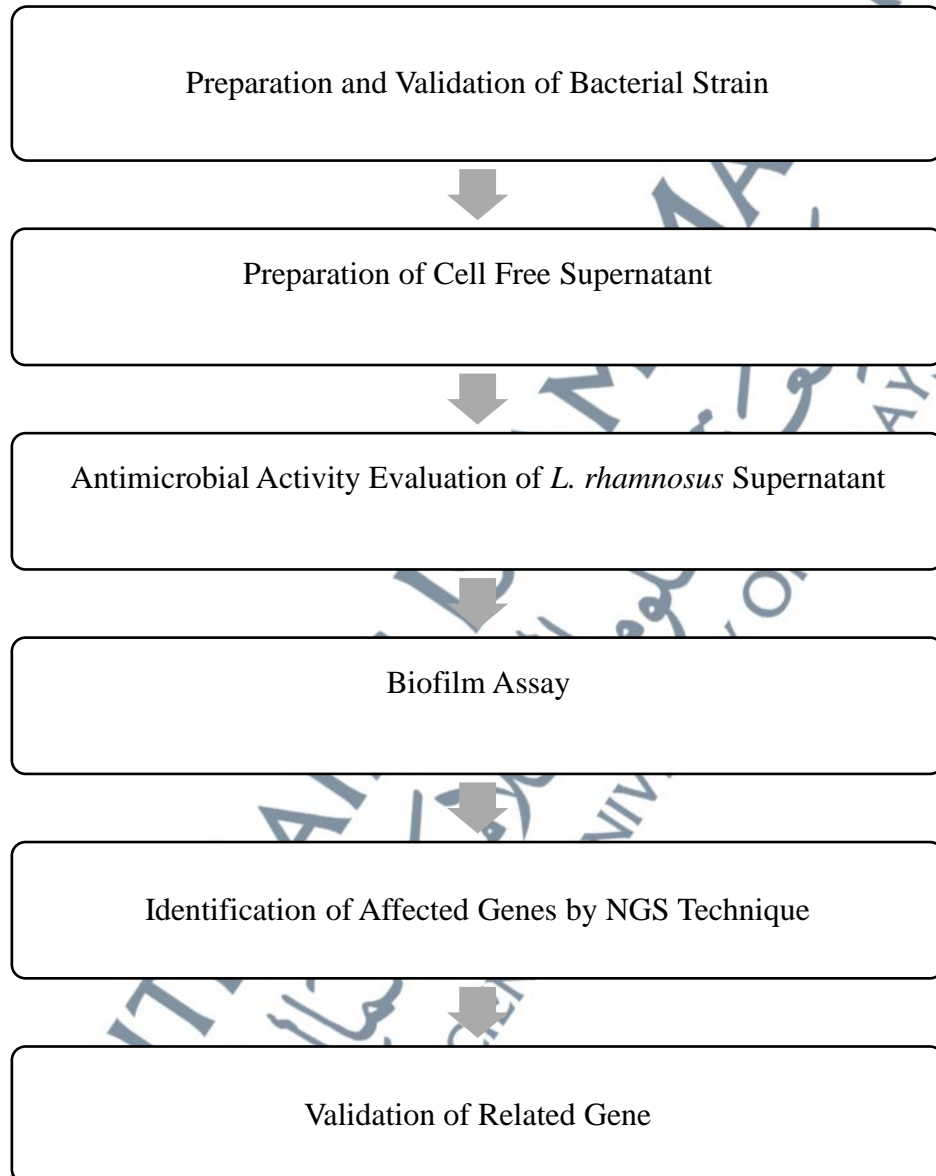


Table A1: List of equipment used in the research.

No	Equipment	Brands
1	-80°C Freezer, -20°C Freezer, 4°C Refrigerator	Eppendorf, Hamburg, Germany,
2	Micropipettes	
3	Anaerobic chamber	Baker Ruskin Bugbox, Maine, USA.
4	Autoclave	Hirayama Manufacturing Co., Saitama, Japan
5	Biosafety Cabinet	Haier Group, Qingdao, China.
6	Centrifuges	Beckman Coulter Life Science, Indiana, USA.
7	Gel electrophoresis set	Bio-Rad Laboratories Inc., California, USA.
8	RT- qPCR system	
9	Incubator	Memmert GmbH + Co KG, Schwabach, Germany.
10	Microplate reader	Molecular Devices, LLC, California, USA.

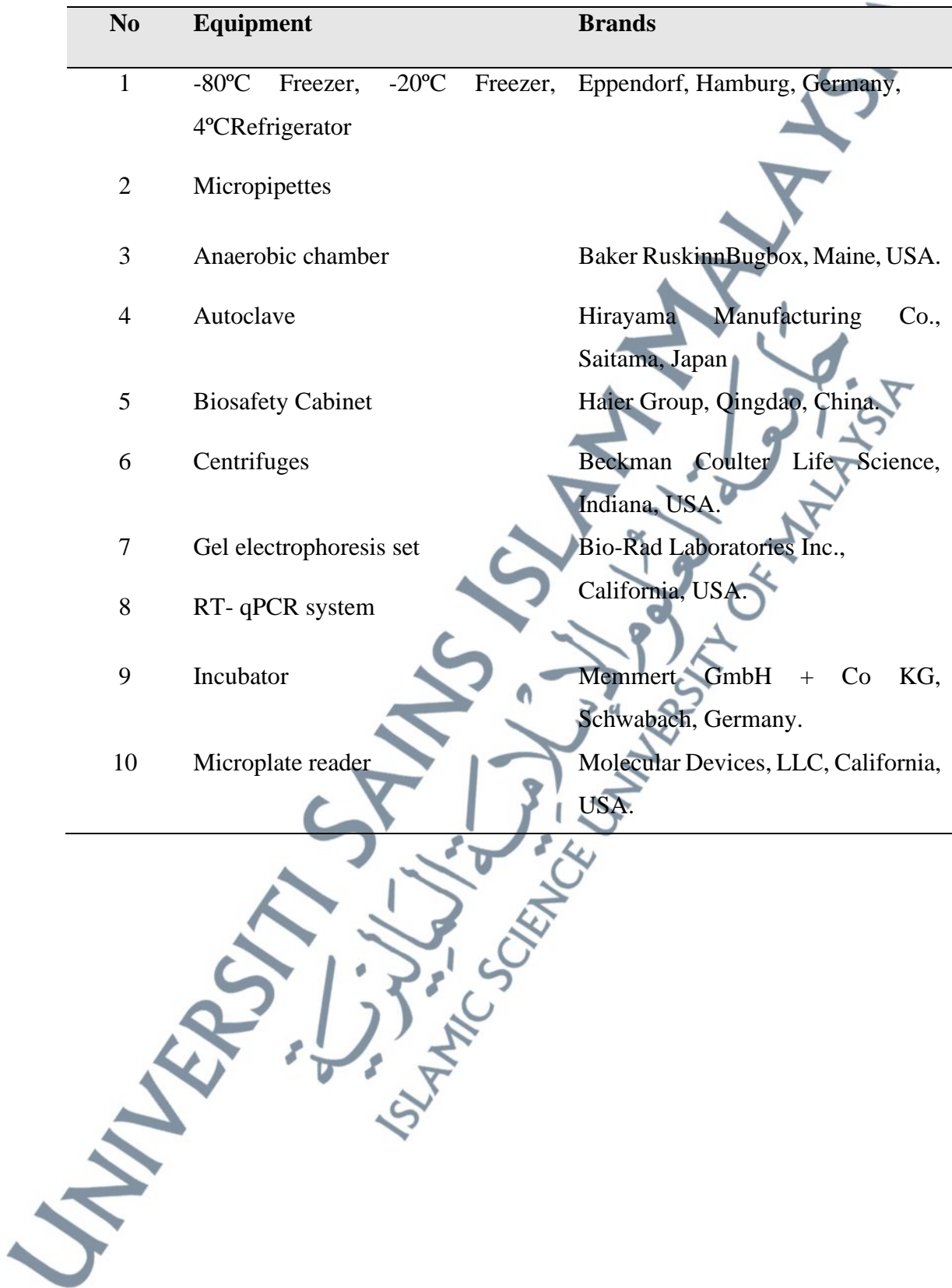


Table A2: List of the consumables used in the research.

No	Consumables	Brands
1	96-well plates	Jet Bio-Filtration Co., Ltd, Guangzhou, China.
2	Bunsen burner	HmBg GmbH Chemicals, Hamburg, Germany.
3	Disposable cotton swab	Fisher Brands, Massachussets, USA.
4	Disposable tubes	
5	Disposable inoculating loop	Microspec Ltd., Bromborough, UK.
6	Microcentrifuge tubes	Eppendorf, Hamburg, Germany.
7	PCR tubes	
8	Parafilm	Bemis Company, Wisconsin, USA.
9	Petri dish	Wanpow Plastic Industries Sdn. Bhd., Selangor, Malaysia.
10	Pipettes tips	Thermo Fisher Scientific, Massachussets, USA.
11	Syringe filter (0.2 $\mu$ m cellulose acetate filter)	
12	Sterile Whatman paper disc	Whatman plc, Buckinghamshire, UK.
13	Syringe	Terumo Corporations, Tokyo, Japan.

Table A3: List of the materials used in the research.

No	Materials	Brands
1	20% glycerol (indoco)	Thermo Scientific, MA, USA
2	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide	
3	30% acetic acid	
4	Crystal violet solution	
5	70% ethanol	
6	Gram staining set	
7	Phosphate buffer saline	
8	<i>P. gingivalis</i> ATCC 33277 reference cultures KWIK-STIK	Microbiologics, MN, USA
9	<i>L. rhamnosus</i> ATCC 7469 reference cultures KWIK-STIK	
10	De Man, Rogosa and Sharpe (MRS) agar and broth media Oxoid	Oxoid, Basingstoke, HA, UK
11	Wilkins-Chalgren Anaerobic agar and broth media oxoid	
12	SV Total RNA Isolation System	Promega, Madison, WI, USA
13	GoTaq® 2-Step RT-qPCR System	
14	0.2% chlorhexidine (Clinical grade)	Indoco Remedies, MB, India

## APPENDIX B: ANTI-BIOFILM ACTIVITY

Table B1: The percentage of reduction in table form (mean  $\pm$  SD).

	<i>L. rhamnosus</i> ATCC 7469	Chlorhexidine	Untreated
<b>4 MBC</b>	84.94 $\pm$ 3.20	96.03 $\pm$ 4.29	0
<b>2 MBC</b>	76.89 $\pm$ 7.58	92.05 $\pm$ 8.19	0
<b>MBC</b>	76.63 $\pm$ 0.66	88.50 $\pm$ 8.08	0
<b>0.5 MBC</b>	51.50 $\pm$ 2.36	83.69 $\pm$ 11.63	0
<b>0.25 MBC</b>	22.53 $\pm$ 12.29	80.35 $\pm$ 12.81	0
<b>0.125 MBC</b>	14.00 $\pm$ 3.41	76.62 $\pm$ 5.86	0

## APPENDIX C: RT-QPCR CURVES

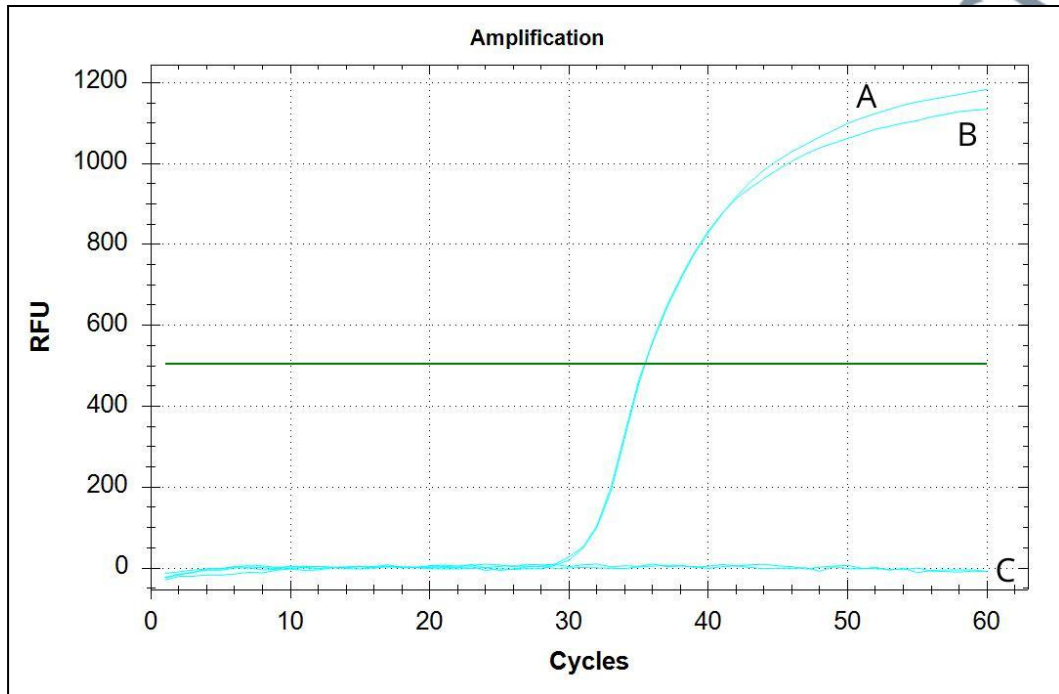


Figure C1: The RT-qPCR curve for 16S rRNA gene (A: *P. gingivalis* treated with *L. rhamnosus* ATCC 7469 CFS, B: Untreated *P. gingivalis*, C: Non-replicating control).

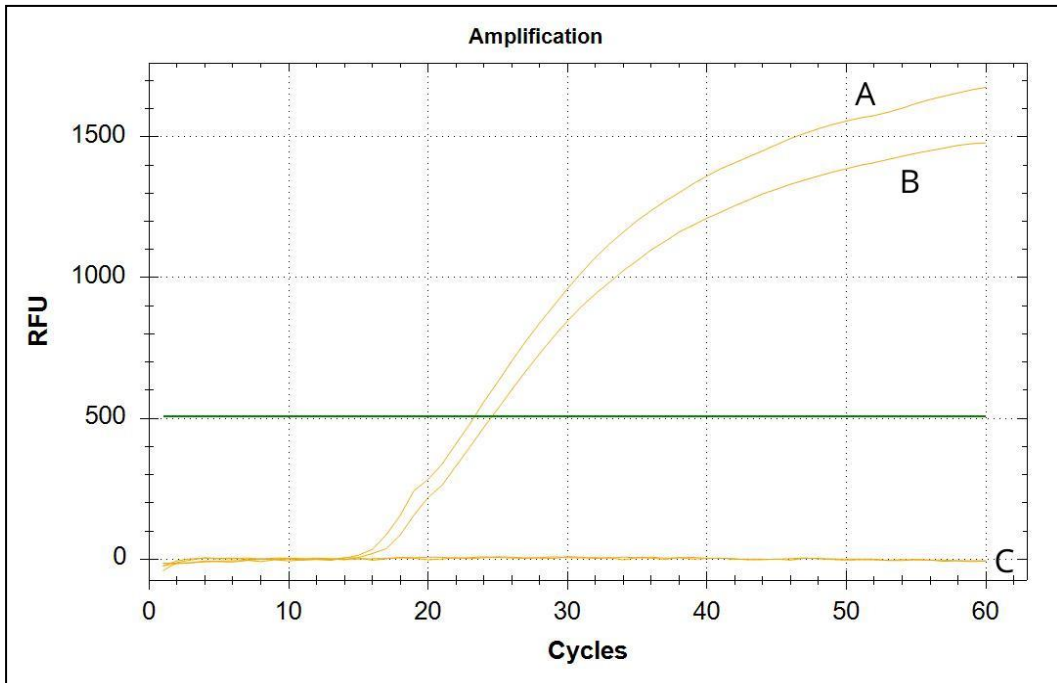


Figure C2: The RT-qPCR curve for *fimA* gene (A: *P. gingivalis* treated with *L. rhamnosus* ATCC 7469 CFS, B: Untreated *P. gingivalis*, C: Non-replicating control).

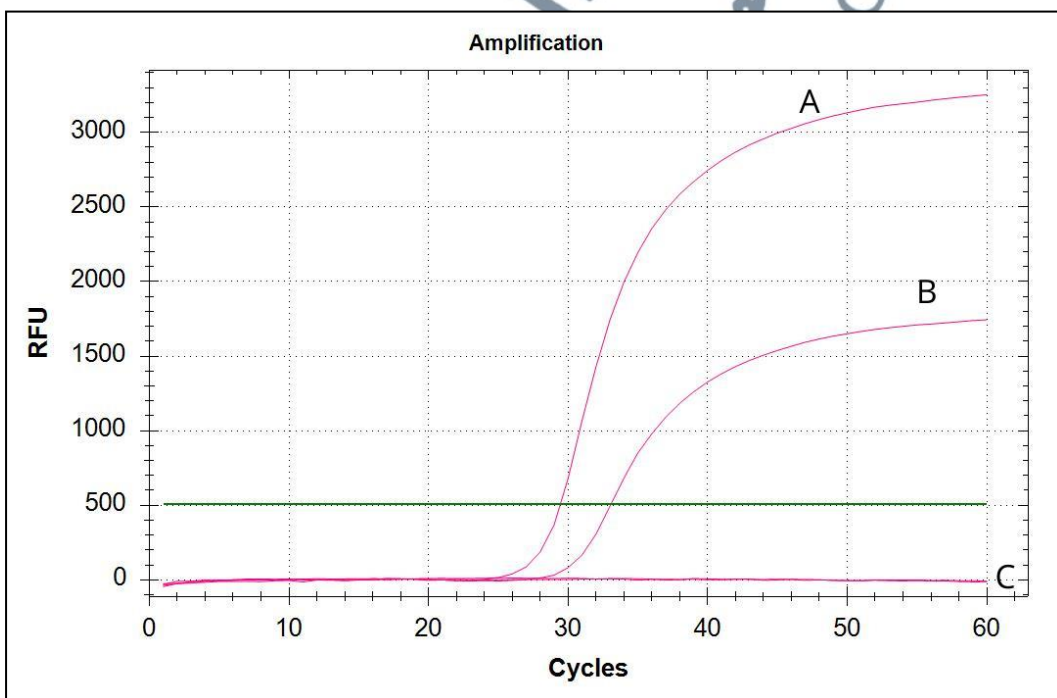


Figure C3: The RT-qPCR curve for *mfaI* gene (A: *P. gingivalis* treated with *L. rhamnosus* ATCC 7469 CFS, B: Untreated *P. gingivalis*, C: Non-replicating control).

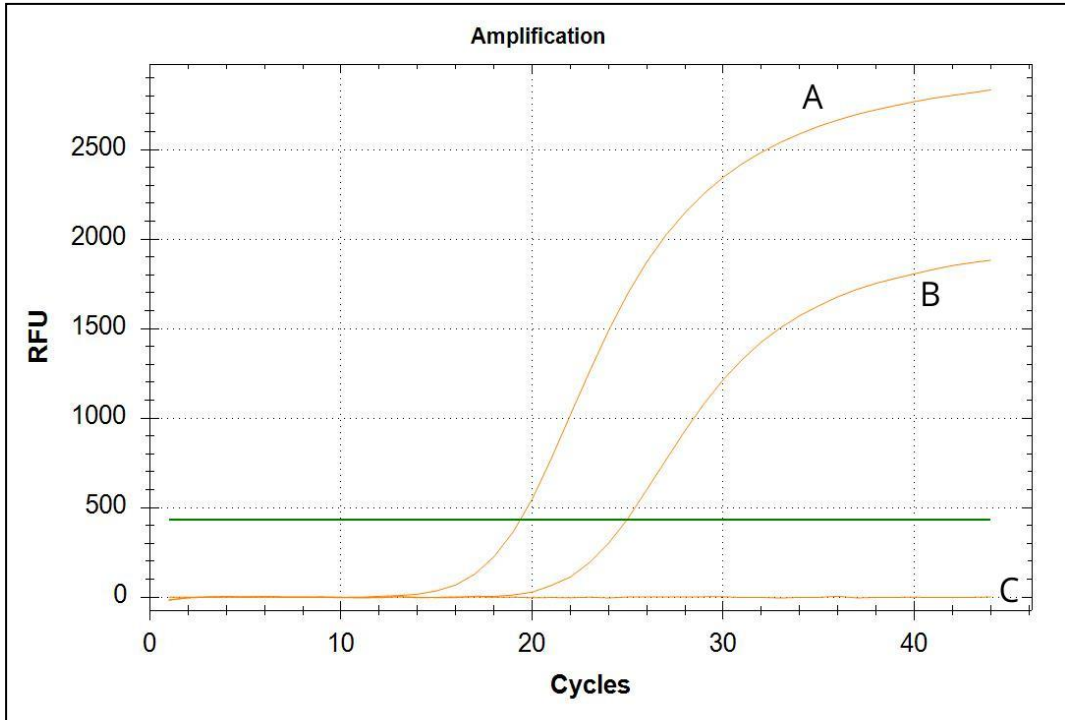


Figure C4: The RT-qPCR curve for *kgp* gene (A: *P. gingivalis* treated with *L. rhamnosus* ATCC 7469 CFS, B: Untreated *P. gingivalis*, C: Non-replicating control).

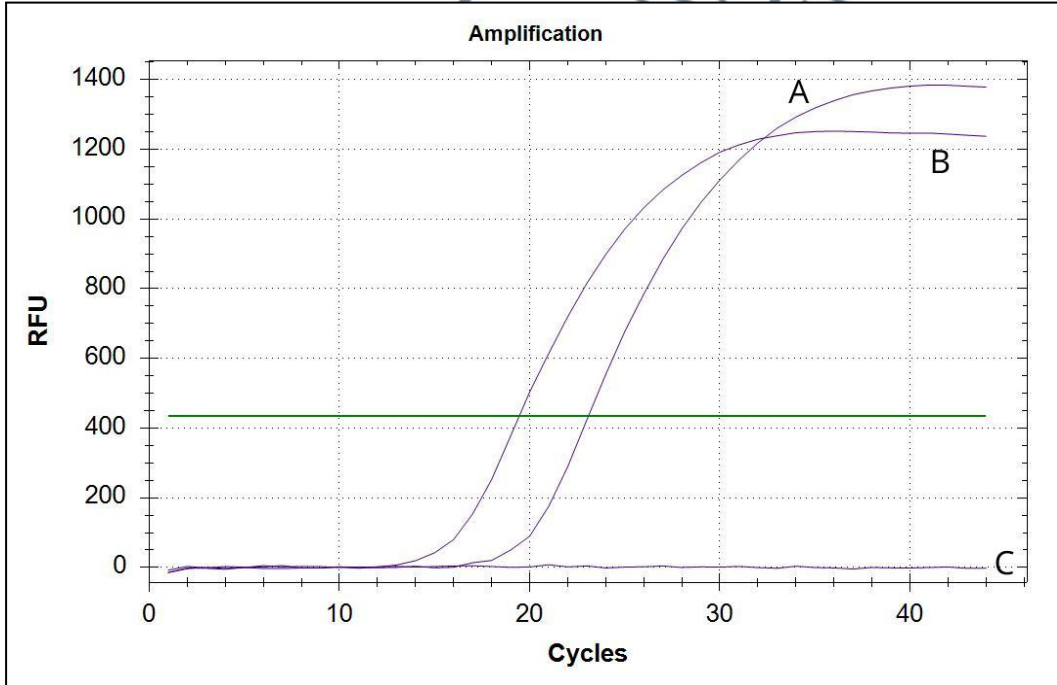


Figure C5: The RT-qPCR curve for *rgp* gene (A: *P. gingivalis* treated with *L. rhamnosus* ATCC 7469 CFS, B: Untreated *P. gingivalis*, C: Non-replicating control).

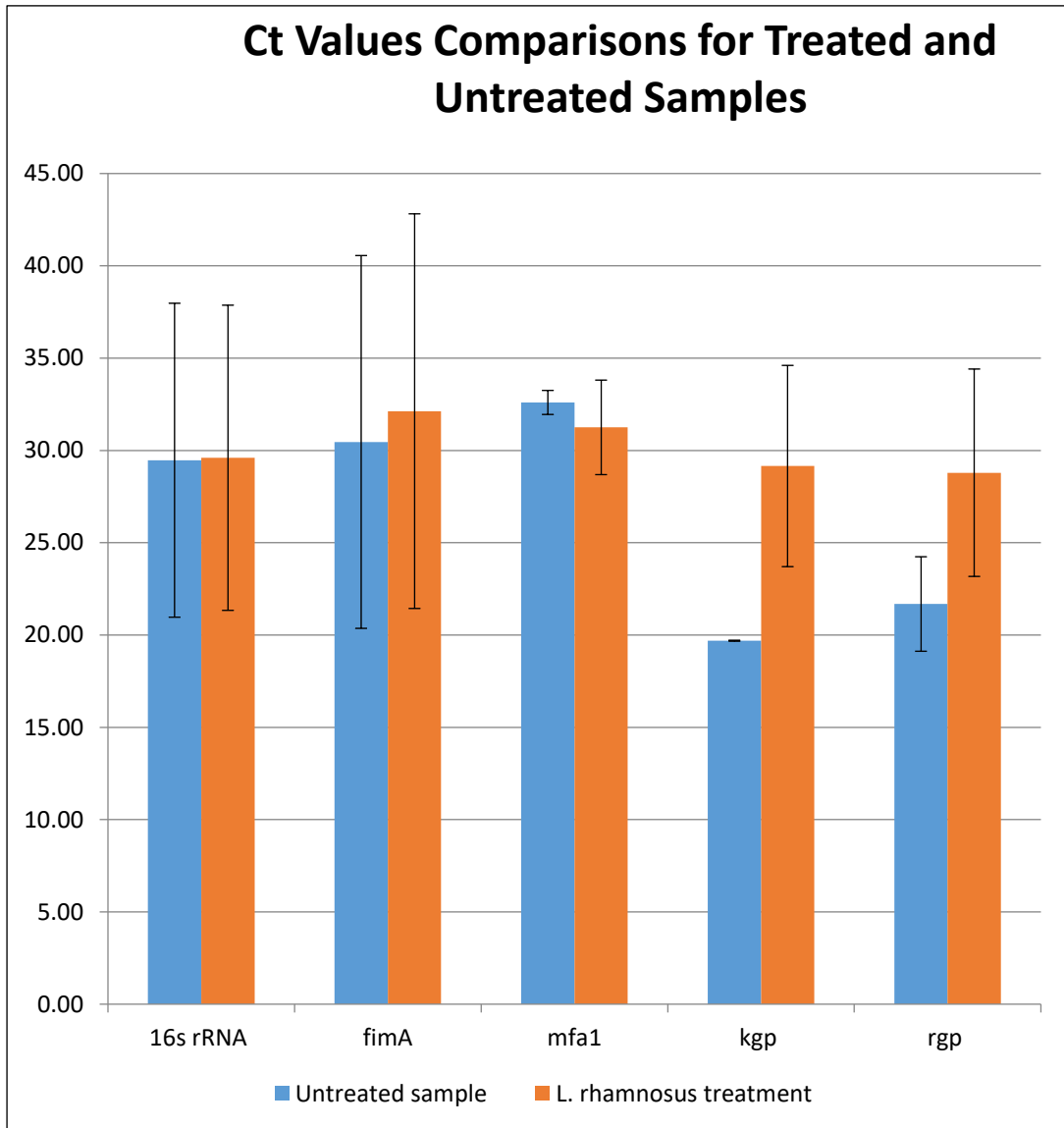


Figure C6: The Ct values demonstration for all genes of interest.

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