

# Characterising Innate Immune Responses and the Role of PD-1 in Patients with COPD

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B.BiomedSci (Honours)

Thesis for Doctorate of Philosophy (Medicine)

University of Newcastle

1<sup>st</sup> September, 2014

## **Statement of Originality**

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1<sup>st</sup> September 2014

## **Conference Presentations and Publications Related to this Research**

### **Conference Presentations**

1. See H, Oldham R, Timmins N, Hansbro P, Wark P, Gibson P. Rhinovirus (RV) induced inflammatory response in mononuclear cells is enhanced by coculture with airway epithelium. *Respirology* 2007;[TSANZ Abstracts, Auckland] (E3).
2. See H, Oldham R, Timmins N, Hansbro P, Wark P, Gibson P. Response by peripheral blood monocytes (PBMCs) to rhinovirus (RV) is greater in cells exposed to infected epithelium in coculture than exposed to RV alone. *Am J Respir Crit Care Med.* 2007;[ATS 2007; San Francisco] (E3).
3. Wark PAB, See HV, Simpson JL, Forbes RL, Hansbro PM. Peripheral blood monocytes (PBMCs) display innate antiviral response to rhinovirus (RV) infected bronchial epithelial cells. *J Immunol.* 2009;[Seattle, WASH] (E3).
4. See HV, Simpson JL, Hansbro PM, Wark PAB. COPD patients PBMCs have an impaired immune response to rhinovirus-infected bronchial epithelium. *Respirology* 2011;[TSANZ Abstracts, Perth] (E3).
5. See HV, Simpson JL, Hansbro PM, Wark PAB. Stable COPD patients have less rhinovirus-induced intracellular innate cytokines detected in PBMCs compared to healthy adults. *Respirology* 2012;[TSANZ Abstracts, Canberra] (E3).

### **Journal Articles**

1. See H, Wark P. Innate immune response to viral infection of the lungs. *Paediatr Respir Rev.* 2008 Dec;9(4):243-50. PubMed PMID: 19026365. eng.

## Acknowledgements

This research was made possible by the financial support of the School of Medicine and Public Health, the John Hunter Charitable Trust Fund and the GlaxoSmithKline PhD support grants. For me, this thesis has been the classic roller-coaster experience and taught me many academic, mental and technical skills. I could not have achieved my goals without the support and guidance from a large network of people, both within the university, HMRI, the Australian Army, and my personal life.

There are many people I wish to thank, starting with Associate Professor Peter Wark for your supervision and guidance, and for teaching me the intricacies of conducting research; from hypothesis inception, through to interpretation and communication. You have prepared me well for my future career. Thank you Professor Phil Hansbro for your enthusiasm, advice and assistance over the years, and for your support in preparing this thesis. Thank you Associate Professor Jodie Simpson for your contribution over the years, and particularly your vital assistance in preparing this thesis. Your ongoing support has paid off.

To the staff and students, past and present, from the Respiratory Research team, thank you. Specifically, the laboratory scientists who taught me foundation methodology; Terry Grissell, Joanna Latter, Kellie Fakes, and Calida Garside. To my colleagues who have supported my laboratory work; Kristy Parsons, Melinda Tooze, Naomi Fibbens, Rebecca Oldham, Michelle Gleeson, and Bridgette Ridewood, thank you for everything. Thank you clinical scientists; Kelly Steel, Jessica Kay, and Amber Smith for your assistance and training in the conduct of clinical study visits and sample collection. Special thanks to those with whom I shared the studenthood, Assoc Prof. Vanessa McDonald, Dr. Alan Hsu, Dr. Rebecca Vanders, and Heng Zhong, and the many other successful students from Respiratory Medicine. Many thanks to Deborah Hall, Heather Powell, Assoc Prof. Lisa Wood, Dr. Vanessa Murphy, Dr. Katie Baines, and Prof. Peter Gibson for your assistance and advice over the years. It's been a pleasure to be part of the team.

To my family and friends I will be forever grateful for your unwavering support through my research higher degree. Mum and Dad you have done everything you could to encourage and assist over the years. Also, thank you Alexander and Mitchell See, above everything else you have given me unconditional brotherly love. Nancy Ross, and Keith and Isabel See, you all

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supported me, not only as grandparents, but by offering yourselves to my research. Thank you Kristy Parsons and Matthew Nichol for taking me into your home for the final thesis production.

Thank you to all my study participants, those who are healthy volunteers who were always willing to help, and those patients who gave me their time and tissue samples whilst they were ill. To all the Respiratory Specialists, Allied Health and Nursing staff that allowed me access to the wards, rehabilitation classes, outpatient clinics and bronchoscopy suites, and for allowing me to take up your time, thank you.

Thank you Erin Lehane for your support in every way possible. You are most definitely my rock, and we are an excellent team.

## Contents

<b>Statement of Originality .....</b>	<b>i</b>
<b>Conference Presentations and Publications Related to this Research.....</b>	<b>ii</b>
<b>Acknowledgements .....</b>	<b>iii</b>
<b>List of Figures .....</b>	<b>xi</b>
<b>List of Tables .....</b>	<b>xv</b>
<b>List of Abbreviations .....</b>	<b>xix</b>
<b>Abstract .....</b>	<b>1</b>
<b>1. INTRODUCTION .....</b>	<b>2</b>
1.1. Chronic Obstructive Pulmonary Disease .....	2
1.2. Epidemiology and Burden of Disease.....	2
1.3. Symptoms and Stages of COPD .....	3
1.4. Impact of Exacerbations on Disease Progression and Cost .....	4
1.5. Clinical Characterisation of Exacerbations of COPD .....	5
1.6. Pathology of COPD .....	6
1.7. Immunology of COPD .....	9
1.7.1. Innate immunity.....	13
1.8. Conclusion .....	19
1.9. Hypothesis .....	19
1.10. Aims .....	19

<b>1.11. Research outline.....</b>	<b>20</b>
1.11.1. Establishment and characterisation of a BEC and PBMC co-culture model of infection .....	20
1.11.2. Characterisation of PBMCs from stable COPD patients .....	22
1.11.3. Characterisation of stable COPD CD8 <sup>+</sup> lymphocytes, from peripheral blood and BAL .....	22
1.11.4. Characterisation of PBMC response from convalescent COPD patients, and exacerbating COPD patients .....	23
<b>2. GENERAL MATERIALS AND METHODS .....</b>	<b>25</b>
<b>2.1. Materials .....</b>	<b>25</b>
<b>2.2. Participants .....</b>	<b>25</b>
<b>2.3. Ethics .....</b>	<b>26</b>
<b>2.4. Clinical procedures .....</b>	<b>26</b>
2.4.1. Spirometry .....	26
2.4.2. Venipuncture .....	27
2.4.3. Spontaneous sputum induction.....	27
2.4.4. Questionnaires .....	27
<b>2.5. Laboratory Methods .....</b>	<b>27</b>
2.5.1. Bronchoscopy .....	28
2.5.2. Rhinovirus .....	28
2.5.3. Influenza.....	28
2.5.4. <i>Streptococcus pneumoniae</i> .....	29
2.5.5. Non-Typeable <i>Haemophilus influenzae</i> .....	29
2.5.6. Tissue culture.....	30
2.5.7. ELISA .....	31
2.5.8. Flow cytometry .....	31

<b>2.6. Statistics.....</b>	<b>34</b>
 <b>3. ESTABLISHMENT AND CHARACTERISATION OF RV-1B INFECTED PBMCS-BEC</b>	
<b>CO-CULTURES .....</b>	<b>35</b>
 <b>Abstract .....</b>	<b>35</b>
 <b>3.1. Introduction.....</b>	<b>36</b>
 <b>3.2. Methods.....</b>	<b>37</b>
3.2.1. Participants .....	37
3.2.2. Rhinovirus .....	37
3.2.3. PBMC isolation.....	38
3.2.4. White blood cell isolation.....	38
3.2.5. Infection of BECs .....	38
3.2.6. PBMCs and infected BEC co-culture .....	38
3.2.7. ELISAs .....	38
3.2.8. Cell viability .....	39
3.2.9. Proliferation assay.....	39
3.2.10. Synthetic stimulation of PBMCs with TLR agonists.....	39
3.2.11. Magnetic separation and ELISpot .....	39
3.2.12. Blocking of HLA-ABC and HLA-DR .....	39
3.2.13. Statistical analysis .....	40
 <b>3.3. Results.....</b>	<b>40</b>
3.3.1. RV-1B infects and replicates in BECs.....	40
3.3.2. PBMCs response to RV-1B is increased in co-culture .....	41
3.3.3. PBMCs and BECs remain viable .....	46
3.3.4. RV does not induce proliferation of PBMCs.....	46
3.3.5. RV induces perforin release.....	48
3.3.6. PBMCs respond to TLR agonists.....	48
3.3.7. PBMC subpopulations do not respond to RV .....	49



3.3.8. IFN- $\alpha$ and IFN- $\gamma$ are HLA-dependent.....	49
<b>3.4. Discussion .....</b>	<b>52</b>
<b>4. STABLE COPD PATIENTS PBMC IN VITRO RESPONSES TO RV-1B, COMPARED WITH HEALTHY PBMCs .....</b>	<b>55</b>
<b>Abstract .....</b>	<b>55</b>
<b>4.1. Introduction.....</b>	<b>56</b>
<b>4.2. Methods.....</b>	<b>57</b>
4.2.1. Participants .....	57
4.2.2. Tissue culture.....	57
4.2.3. Statistical analysis.....	58
<b>4.3. Results.....</b>	<b>58</b>
4.3.1. Clinical characteristics.....	58
4.3.2. Cytokine responses to RV exposure in culture .....	59
4.3.3. TNF- $\alpha$ release by PBMCs when exposed to RV is reduced in PBMCs from stable COPD patients .....	59
4.3.4. RV-infection elicits IFN- $\lambda$ and IFN- $\gamma$ from co-cultures of COPD patient PBMCs and Calu-3s BECs.....	60
4.3.5. IFN- $\lambda$ release by RV-infected pBECs is less in COPD pBECs compared with healthy pBECs .....	61
4.3.6. Reduced TNF- response to RV in co-cultures of COPD patient pBECs and PBMCs compared with healthy cultures. ....	62
4.3.7. Summary of <i>in vitro</i> culture cytokine responses to RV in COPD patients, compared with healthy participants.....	63
4.3.8. RV-1B titre increased in co-cultures of COPD PBMCs and Calu-3, compared with healthy co-cultures. ....	64
<b>4.4. Discussion .....</b>	<b>64</b>

<b>5. CHARACTERISATION OF CD8<sup>+</sup> LYMPHOCYTES FROM BLOOD AND BAL IN STABLE COPD PATIENTS .....</b>	<b>67</b>
<b>Abstract .....</b>	<b>67</b>
<b>5.1. Introduction.....</b>	<b>68</b>
<b>5.2. Methods.....</b>	<b>70</b>
5.2.1. Participants .....	70
5.2.2. Cell isolation and preparation .....	70
5.2.3. Phenotyping of CD8 <sup>+</sup> effector cells .....	71
<b>5.2.4. Statistical analysis .....</b>	<b>74</b>
<b>5.3. Results.....</b>	<b>75</b>
5.3.1. Clinical characteristics.....	75
5.3.2. CD8 <sup>+</sup> T <sub>EM</sub> is decreased in COPD patient peripheral blood .....	76
5.3.3. CD8 <sup>+</sup> activation is negatively correlated to lung function.....	76
5.3.4. No difference in PD-1 expression on blood CD8 <sup>+</sup> lymphocytes between groups.....	78
5.3.5. Clinical characteristics of the bronchoscopy subgroup.....	79
5.3.6. COPD patients have reduced BAL CD8 <sup>+</sup> lymphocytes .....	80
5.3.7. CD8 <sup>+</sup> lymphocyte proportion in BAL correlates to neutrophil and macrophage percentage .....	80
5.3.8. PD-1 expression on CD8 <sup>+</sup> lymphocytes and T <sub>EM</sub> correlated with levels of the T <sub>CM</sub> population.....	81
5.3.9. No difference in PD-1 expression on BAL CD8 <sup>+</sup> lymphocytes between groups.....	82
<b>5.4. Discussion .....</b>	<b>83</b>
<b>6. IMMUNE RESPONSE TO RESPIRATORY PATHOGENS BY PBMCS FROM COPD PATIENTS.....</b>	<b>86</b>
<b>Abstract .....</b>	<b>86</b>

<b>6.1. Introduction.....</b>	<b>87</b>
<b>6.2. Methods.....</b>	<b>89</b>
6.2.1. Participants .....	89
6.2.2. Clinical data.....	90
6.2.3. Tissue culture.....	90
6.2.4. Flow cytometry gating and cell selection .....	91
6.2.5. Statistical analysis.....	93
<b>6.3. Results.....</b>	<b>94</b>
6.3.1. Exacerbating COPD patients compared to healthy participants.....	94
6.3.2. Convalescent COPD patients compared to healthy participants .....	111
6.3.3. Exacerbating COPD compared to convalescent COPD patients .....	125
Summary.....	141
<b>6.4. Discussion .....</b>	<b>141</b>
<b>7. GENERAL DISCUSSION.....</b>	<b>147</b>
7.1. Conclusions .....	150
7.2. Future Direction.....	151
<b>A. REFERENCES .....</b>	<b>152</b>
<b>B. MATERIALS .....</b>	<b>166</b>
<b>C. PATIENT QUESTIONNAIRES' .....</b>	<b>171</b>
<b>D. FULL DATA OUTPUT FROM CHAPTER 6.....</b>	<b>202</b>

## List of Figures

FIGURE 1 - PREVALENCE OF COPD.....	3
FIGURE 2 - DIRECT EXPENDITURE ALLOCATED TO COPD BY TYPE OF EXPENDITURE [19] .....	5
FIGURE 3 - RATES OF DECLINE IN LUNG FUNCTION FOR EX-SMOKERS AND SMOKERS WHO EITHER DO NOT DEVELOP COPD, OR WHO HAVE COPD AT DIFFERENCE STAGES .....	7
FIGURE 4 - INFLAMMATION AND CELLULAR INTERACTION IN COPD .....	10
FIGURE 5 - PRIMING AND MATURATION OF DENDRITIC CELLS .....	16
FIGURE 6 - WORK FLOW OF THE ESTABLISHMENT AND CHARACTERISATION OF AN <i>IN</i> <i>VITRO</i> MODEL OF PBMC EXPOSURE TO RV-1B AND CO-CULTURE WITH RV- INFECTED BECS.....	21
FIGURE 7 - WORK FLOW OF THE CHARACTERISATION OF INNATE CYTOKINE RESPONSE AND QUANTIFYING OF PBMCs FROM STABLE COPD PATIENTS .....	23
FIGURE 8 - WORK FLOW OF THE CHARACTERISATION OF THE PBMC RESPONSE FROM COPD PATIENTS WITH AN ACUTE EXACERBATION, THROUGH TO A CONVALESCENT COPD STATE.....	24
FIGURE 9 - RV-1B REPLICATES IN PBMCs CO-CULTURED WITH CALU-3S .....	41
FIGURE 10 - PBMCs RESPOND TO RV-1B TO A GREATER EXTENT WHEN IN CO- CULTURE WITH BECS .....	44
FIGURE 11 - PBMCs RESPOND TO RV-1B BETTER WHEN IN CO-CULTURE WITH PBECS .....	45
FIGURE 12 - PBMCs REMAIN VIABLE IN RV-1B CULTURES .....	46
FIGURE 13 - RV-1B DID NOT CAUSE PROLIFERATION OF PBMCs.....	47
FIGURE 14 - PERFORIN IS RELEASED FROM PBMCs WHEN CULTURED ALONE WITH RV-1B, OR IN CO-CULTURE WITH INFECTED BECS.....	48
FIGURE 15 - PBMCs RESPOND TO TLR AGONISTS .....	49
FIGURE 16 - HLA BLOCKADE REDUCES IFN- $\alpha$ AND IFN- $\gamma$ PRODUCTION FROM PBMCs	52
FIGURE 17 - RV-1B INDUCED TNF- $\alpha$ FROM PBMC CULTURES IS REDUCED IN STABLE COPD PATIENTS .....	60

FIGURE 18 - COPD PBMC-CALU-3 CO-CULTURES HAVE A REDUCED TNF- $\alpha$ AND IFN- $\alpha$ RESPONSE TO RV-1B.....	61
FIGURE 19 - RV-1B INFECTED COPD PBECS CULTURES HAVE REDUCED IFN- $\alpha$ RELEASE.....	62
FIGURE 20 - COPD PBMCs-PBECS CO-CULTURES HAD A REDUCED TNF- $\alpha$ RESPONSE RV-1B.....	63
FIGURE 21 - RV-1B TITRE INCREASED IN CO-CULTURES OF COPD PBMCs-CALU-3S...	64
FIGURE 22 – GATING OF CD8 <sup>+</sup> T LYMPHOCYTE MEMORY CELLS .....	71
FIGURE 23 - FLUORESCENCE SPECTRUM VIEWER .....	73
FIGURE 24 - COPD PATIENTS HAVE DECREASED T <sub>EM</sub> IN THE PERIPHERAL BLOOD .....	76
FIGURE 25 - LUNG FUNCTION IS NEGATIVELY CORRELATED WITH CD44 EXPRESSION ON CD8 <sup>+</sup> T LYMPHOCYTES IN BLOOD.....	77
FIGURE 26 - PD-1 EXPRESSION ON BLOOD CD8 LYMPHOCYTES CORRELATES WITH T <sub>EM</sub> PROPORTION .....	77
FIGURE 27 - PD-1 STAINING OF CD8 <sup>+</sup> T LYMPHOCYTES .....	78
FIGURE 28 - COPD PATIENTS HAVE REDUCED CD8 <sup>+</sup> LYMPHOCYTES IN THE BAL .....	80
FIGURE 29 - PERCENTAGES OF NEUTROPHILS INCREASE WITH CD8 LYMPHOCYTES, WHILE MACROPHAGES DECREASE.....	81
FIGURE 30 – CORRELATION BETWEEN PD-1 EXPRESSION ON CD8 <sup>+</sup> LYMPHOCYTES, PD-1 EXPRESSION ON T <sub>EM</sub> , AND THE PERCENTAGE OF T <sub>CM</sub> IN THE BAL .....	82
FIGURE 31 - PD-1/PD-L1 PATHWAY OF T CELL DYSFUNCTION DURING CHRONIC VIRAL INFECTION .....	88
FIGURE 32 - GATING OF EFFECTOR CELLS .....	92
FIGURE 33 - GATING OF ANTIGEN PRESENTING CELLS.....	93
FIGURE 34 - BASELINE PD-L1 EXPRESSION ON PDCs IS HIGHER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .....	95
FIGURE 35 - PHA-STIMULATED IFN- $\gamma$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .....	97
FIGURE 36 - RV-1B INDUCED IFN- $\alpha$ AND IFN- $\lambda$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS.....	100

FIGURE 37 - H1N1 INDUCED IFN- $\alpha$ , IFN- $\lambda$ , TNF- $\alpha$ AND IFN- $\gamma$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS.....	103
FIGURE 38 - SPN INDUCED IFN- $\alpha$ AND IFN- $\gamma$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS.....	106
FIGURE 39 - NTHI INDUCED IFN- $\gamma$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .....	109
FIGURE 40 - BASELINE PD-1 EXPRESSION ON PDCS IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .....	112
FIGURE 41 - PHA-STIMULATED IFN- $\gamma$ IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .....	114
FIGURE 42 - RV-1B INDUCED IFN- $\lambda$ IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .....	116
FIGURE 43 - H1N1 INDUCED IFN- $\lambda$ IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .....	118
FIGURE 44 - H1N1 INDUCED PD-1 EXPRESSION ON CD4 <sup>+</sup> LYMPHOCYTES IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS.....	119
FIGURE 45 - SPN INDUCED IFN- $\alpha$ IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .....	121
FIGURE 46 - NTHI INDUCED PD-1 EXPRESSION ON CD4 <sup>+</sup> LYMPHOCYTES IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS.....	124
FIGURE 47 - CHANGE IN CLINICAL PARAMETERS FROM EXACERBATION TO CONVALESCENCE .....	127
FIGURE 48 - BASELINE PD-L1 EXPRESSION ON PDCS IS HIGHER IN EXACERBATING COPD PATIENTS, COMPARED TO CONVALESCENT COPD PATIENTS.....	128
FIGURE 49 - PHA-STIMULATED IFN- $\gamma$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO CONVALESCENT COPD PATIENTS.....	129
FIGURE 50 - RV-1B INDUCED PD-1 EXPRESSION ON PDCS IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO EXACERBATING COPD PATIENTS.....	132

FIGURE 51 - H1N1 INDUCED IFN- $\alpha$ AND IFN- $\lambda$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO CONVALESCENT COPD PATIENTS .....	134
FIGURE 52 - SPN INDUCED IFN- $\alpha$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED WITH CONVALESCENT COPD PATIENTS .....	136
FIGURE 53 - NTHI INDUCED IL-1 $\beta$ AND IFN- $\gamma$ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED WITH CONVALESCENT COPD PATIENTS.....	139

## List of Tables

TABLE 1-1 - CLASSIFICATION OF SEVERITY OF AIRFLOW LIMITATION IN COPD (BASED ON POST-BRONCHODILATOR FEV <sub>1</sub> ) .....	4
TABLE 1-2 - CYTOKINES OF INTEREST CONTRIBUTING TO THE PATHOLOGY OF COPD .....	11
TABLE 3-1 - RV-1B INDUCED IMMUNE RESPONSES ARE MORE ROBUST IN CALU-3-PBMC CO-CULTURES, THAN EITHER CELL ALONE. ....	42
TABLE 3-2 - RV-1B INDUCED IMMUNE RESPONSES ARE MORE ROBUST IN PBEC-PBMC CO-CULTURES, THAN EITHER CELL ALONE.....	43
TABLE 3-3 - CYTOKINE EXPRESSION FROM RV-1B INFECTED CO-CULTURES WITH HLA-NEUTRALISING ANTIBODY, COMPARED TO NON-BLOCKED CULTURES (RV-1B ALONE) .....	51
TABLE 4-4-1 - CLINICAL CHARACTERISTICS OF PARTICIPANTS.....	59
TABLE 4-4-2 - CYTOKINE RESPONSES FROM COPD CELL CULTURE COMPARED TO HEALTHY CELL CULTURE OUTPUT.....	64
TABLE 5-1 - STUDY GROUP CLINICAL CHARACTERISTICS.....	75
TABLE 5-2 - MFI OF PD-1 ON CD8 <sup>+</sup> BLOOD LYMPHOCYTES .....	78
TABLE 5-3 - BAL SUBGROUP CLINICAL CHARACTERISTICS.....	79
TABLE 5-4 - MFI OF PD-1 ON CD8 <sup>+</sup> BAL LYMPHOCYTES .....	82
TABLE 6-1 - MICROORGANISM DOSE PER WELL .....	90
TABLE 6-2 - CLINICAL CHARACTERISTICS OF EXACERBATING COPD PATIENTS COMPARED TO HEALTHY PARTICIPANTS .....	94
TABLE 6-3 - PROTEIN INDUCTION FROM PHA-EXPOSED PBMCs.....	96
TABLE 6-4 - PD-1 EXPRESSION INDUCTION ON PHA-EXPOSED PBMCs .....	97
TABLE 6-5 - PD-L1 EXPRESSION INDUCTION ON PHA-EXPOSED PBMCs .....	98
TABLE 6-6 - PROTEIN INDUCTION FROM RV-EXPOSED PBMCs .....	99
TABLE 6-7 - INDUCTION OF PD-1 EXPRESSION ON RV-EXPOSED PBMCs.....	100
TABLE 6-8 - EXPRESSION OF PD-L1 ON RV-EXPOSED PBMCs.....	101
TABLE 6-9 - PROTEIN INDUCTION FROM PBMCs BY H1N1 .....	102
TABLE 6-10 - EXPRESSION OF PD-1 ON H1N1-EXPOSED PBMCs.....	104



TABLE 6-11 - EXPRESSION OF PD-L1 ON H1N1-EXPOSED PBMCS.....	104
TABLE 6-12 - PROTEIN INDUCTION FROM PBMCS BY SPN.....	105
TABLE 6-13 - EXPRESSION OF PD-1 ON SPN-EXPOSED PBMCS .....	106
TABLE 6-14 - EXPRESSION OF PD-L1 ON SPN-EXPOSED PBMCS .....	107
TABLE 6-15 - PROTEIN INDUCTION FROM PBMCS BY NTHI-LIVE.....	108
TABLE 6-16 - EXPRESSION OF PD-1 ON NTHI-EXPOSED PBMCS .....	109
TABLE 6-17 - EXPRESSION OF PD-L1 ON NTHI-EXPOSED PBMCS .....	110
TABLE 6-18 - CLINICAL CHARACTERISTICS OF CONVALESCENT COPD PATIENTS COMPARED TO HEALTHY PARTICIPANTS .....	111
TABLE 6-19 - PROTEIN INDUCTION FROM PHA-EXPOSED PBMCS.....	113
TABLE 6-20 - PD-1 EXPRESSION INDUCTION ON PHA-EXPOSED PBMCS .....	114
TABLE 6-21 - PD-L1 EXPRESSION INDUCTION ON PHA-EXPOSED PBMCS .....	115
TABLE 6-22 - CYTOKINE PROTEIN INDUCTION FROM RV-EXPOSED PBMCS.....	116
TABLE 6-23 - INDUCTION OF PD-1 EXPRESSION ON RV-EXPOSED PBMCS.....	117
TABLE 6-24 - EXPRESSION OF PD-L1 ON RV-EXPOSED PBMCS.....	117
TABLE 6-25 - CYTOKINE PROTEIN INDUCTION FROM PBMCS BY H1N1 .....	118
TABLE 6-26 - EXPRESSION OF PD-1 ON H1N1-EXPOSED PBMCS.....	119
TABLE 6-27 - EXPRESSION OF PD-L1 ON H1N1-EXPOSED PBMCS.....	120
TABLE 6-28 - CYTOKINE PROTEIN INDUCTION FROM PBMCS BY SPN .....	121
TABLE 6-29 - EXPRESSION OF PD-1 ON SPN-EXPOSED PBMCS .....	122
TABLE 6-30 - EXPRESSION OF PD-L1 ON SPN-EXPOSED PBMCS .....	122
TABLE 6-31 - CYTOKINE PROTEIN INDUCTION FROM PBMCS BY NTHI .....	123
TABLE 6-32 - EXPRESSION OF PD-1 ON NTHI-EXPOSED PBMCS .....	123
TABLE 6-33 - EXPRESSION OF PD-L1 ON NTHI-EXPOSED PBMCS .....	124
TABLE 6-34 - CLINICAL CHARACTERISTICS OF EXACERBATING COPD PATIENTS COMPARED TO CONVALESCENT COPD PATIENTS.....	126
TABLE 6-35 - CYTOKINE PROTEIN INDUCTION FROM PHA-EXPOSED PBMCS .....	129
TABLE 6-36 - PD-1 EXPRESSION ON PHA-EXPOSED PBMCS .....	130
TABLE 6-37 - PD-L1 EXPRESSION ON PHA-EXPOSED PBMCS .....	130
TABLE 6-38 - CYTOKINE PROTEIN INDUCTION FROM RV-EXPOSED PBMCS.....	131

TABLE 6-39 - INDUCTION OF PD-1 EXPRESSION ON RV-EXPOSED PBMCs.....	131
TABLE 6-40 - EXPRESSION OF PD-L1 ON RV-EXPOSED PBMCs.....	132
TABLE 6-41 - CYTOKINE PROTEIN INDUCTION FROM PBMCs BY H1N1 .....	133
TABLE 6-42 - EXPRESSION OF PD-1 ON H1N1-EXPOSED PBMCs.....	134
TABLE 6-43 - EXPRESSION OF PD-L1 ON H1N1-EXPOSED PBMCs.....	135
TABLE 6-44 - PROTEIN INDUCTION FROM PBMCs BY SPN-LIVE.....	136
TABLE 6-45 - EXPRESSION OF PD-1 ON SPN-EXPOSED PBMCs .....	137
TABLE 6-46 - EXPRESSION OF PD-L1 ON SPN-EXPOSED PBMCs .....	137
TABLE 6-47 - PROTEIN INDUCTION FROM PBMCs BY NTHI-LIVE.....	138
TABLE 6-48 - EXPRESSION OF PD-1 ON NTHI-EXPOSED PBMCs .....	139
TABLE 6-49 - EXPRESSION OF PD-L1 ON NTHI-EXPOSED PBMCs .....	140
TABLE 6-50 - SUMMARY OF DIFFERENCES IN PBMC IMMUNE RESPONSES BETWEEN GROUPS.....	141
TABLE B-1 - PATHOGENS USED IN THIS PROJECT .....	166
TABLE B-2 - CELLS USED IN THIS PROJECT .....	166
TABLE B-3 - TISSUE CULTURE MEDIUM USED IN THIS STUDY .....	167
TABLE B-4 - BUFFERS REAGENTS USED IN THIS STUDY .....	167
TABLE B-5 - REAGENTS USED IN THIS STUDY .....	168
TABLE B-6 - ANTIBODIES USED IN CHAPTER 3 .....	168
TABLE B-7 - ANTIBODIES USED IN CHAPTER 5 .....	168
TABLE B-8 - ANTIBODIES USED IN CHAPTER 6 .....	169
TABLE B-9 - KITS USED IN THIS STUDY .....	169
TABLE B-10 - EQUIPMENT USED IN THIS STUDY.....	169
TABLE B-11 - SPECIALIST SOFTWARE USED IN THIS STUDY.....	170
TABLE C-1 - MMRC BREATHLESSNESS SCALE .....	171
TABLE C-2 - CLINICAL RECORD FORMS FOR STUDIES IN CHAPTERS 3 - 5 .....	172
TABLE C-3 - CLINICAL RECORD FORM FOR STUDY IN CHAPTER 6.....	184
TABLE D-1 - HEALTHY PBMC RESPONSE (PG/ML) TO PATHOGEN EXPOSURE.....	202
TABLE D-2 - CONVALESCENT COPD PATIENT PBMC RESPONSE (PG/ML) TO PATHOGEN EXPOSURE .....	203

TABLE D-3 - EXACERBATING COPD PATIENT PBMC RESPONSE (PG/ML) TO PATHOGEN EXPOSURE .....	204
TABLE D-4 - HEALTHY PBMC PD-1 EXPRESSION (MFI) IN RESPONSE TO PATHOGEN EXPOSURE .....	205
TABLE D-5 - CONVALESCENT COPD PATIENT PBMC PD-1 EXPRESSION (MFI) IN RESPONSE TO PATHOGEN EXPOSURE .....	206
TABLE D-6 - EXACERBATING COPD PATIENT PBMC PD-1 EXPRESSION (MFI) IN RESPONSE TO PATHOGEN EXPOSURE .....	207
TABLE D-7 - HEALTHY PBMC PD-L1 EXPRESSION (MFI) IN RESPONSE TO PATHOGEN EXPOSURE .....	208
TABLE D-8 - CONVALESCENT COPD PATIENT PBMC PD-L1 EXPRESSION (MFI) IN RESPONSE TO PATHOGEN EXPOSURE .....	209
TABLE D-9 - EXACERBATING COPD PATIENT PBMC PD-L1 EXPRESSION (MFI) IN RESPONSE TO PATHOGEN EXPOSURE .....	210

## List of Abbreviations

7-AAD	7-Aminoactinomycin D
APC	antigen presenting cell
ATCC	American Type Culture Collection
BAL	bronchial alveolar lavage
BEC	bronchial epithelial cell
CAT	COPD Assessment Test
CBA	Cytometric Bead Array
CCQ	Common Cold Questionnaire
CD	cluster of differentiation
CFSE	carboxyfluorescein succinimidyl ester
cfu	colony forming units
COPD	Chronic Obstructive Pulmonary Disease
CSE	cigarette smoke extract
CXCL	chemokine (C-X-C motif) ligand
CXCR	chemokine (C-X-C motif) receptor
dsRNA	double-stranded ribonucleic acid
ELISA	enzyme linked immunosorbent assay
ELISpot	Enzyme-Linked ImmunoSpot
FACs	Fluorescence-activated cell sorting
FCS	fetal calf serum
FEV <sub>1</sub>	forced expiratory volume in one second
FSC	forward scatter
FVC	forced vital capacity
GOLD	Global Initiative of Chronic Obstructive Lung Disease
H1N1	haemagglutinin 1 neuraminidase 1
HLA	human leukocyte antigen
HMRI	Hunter Medical Research Institute
hr	hour

ICS	inhaled corticosteroids
IFN	interferon
IL	interleukin
IQR	interquartile range
JHH	John Hunter Hospital
LPS	lipopolysaccharide
mDC	myeloid dendritic cells
MHC	major histocompatibility complex
MFI	median intensity fluorescence
MOI	multiplicity of infection
NK	natural killer
NTHi	non-typeable <i>haemophilus influenzae</i>
OCS	oral corticosteroids
pam3cys4K	palmitoyl-3-cystein
pBEC	primary bronchial epithelial cell
PBMC	peripheral blood mononucleocytes
PBS	phosphate-buffered saline
PC	physical containment
PD-1	programmed death-1
pDC	plasmacytoid dendritic cells
PD-L1	programmed death-ligand 1
pfu	plaque-forming units
PHA	phytohaemagglutinin
PolyI:C	polyinosinic-polycytidylic acid
PRR	pattern recognition receptor
RPMI	Roswell Park Memorial Institute
RNA	ribonucleic acid
RSV	respiratory syncytial virus
RV	rhinovirus

Spn	<i>streptococcus pneumoniae</i>
SSC	side scatter
ssRNA	single-stranded ribonucleic acid
TCID <sub>50</sub>	tissue culture infectious dose 50
TCM	T lymphocyte central memory cell
TCR	T-cell receptor
TEM	T lymphocyte effector memory cell
TLR	Toll-like receptor
TNF	tumour necrosis factor
UV	ultra-violet
WBC	white blood cell