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

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Statement of Originality

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository**, subject to the provisions of the Copyright Act 1968.

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Conference Presentations and Publications Related to this Research

Conference Presentations


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).


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

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## Contents

Statement of Originality .................................................................................................................... i

Conference Presentations and Publications Related to this Research ................................... ii

Acknowledgements ........................................................................................................................ iii

List of Figures ................................................................................................................................ xi

List of Tables .................................................................................................................................. xv

List of Abbreviations ..................................................................................................................... xix

Abstract ......................................................................................................................................... 1

1. INTRODUCTION .................................................................................................................. 2

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
1.11. Research outline ........................................................................................................... 20
  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\(^+\) lymphocytes, from peripheral blood and BAL 22
  1.11.4. Characterisation of PBMC response from convalescent COPD patients, and exacerbating COPD patients .................................................................................................. 23

2. GENERAL MATERIALS AND METHODS ........................................................................ 25
  2.1. Materials ................................................................................................................... 25
  2.2. Participants ................................................................................................................ 25
  2.3. Ethics ........................................................................................................................ 26
  2.4. Clinical procedures .................................................................................................. 26
    2.4.1. Spirometry ........................................................................................................... 26
    2.4.2. Venipuncture ...................................................................................................... 27
    2.4.3. Spontaneous sputum induction .......................................................................... 27
    2.4.4. Questionnaires ................................................................................................... 27
  2.5. Laboratory Methods ................................................................................................. 27
    2.5.1. Bronchoscopy ................................................................................................... 28
    2.5.2. Rhinovirus ........................................................................................................ 28
    2.5.3. Influenza ............................................................................................................. 28
    2.5.4. Streptococcus pneumoniae ............................................................................... 29
    2.5.5. Non-Typeable Haemophilus influenzae ............................................................. 29
    2.5.6. Tissue culture ..................................................................................................... 30
    2.5.7. ELISA ................................................................................................................ 31
    2.5.8. Flow cytometry ................................................................................................. 31
2.6. Statistics ........................................................................................................................ 34

3. ESTABLISHMENT AND CHARACTERISATION OF RV-1B INFECTED PBMCs-BEC CO-CULTURES .......................................................................................................................... 35

Abstract ...................................................................................................................................... 35

3.1. Introduction ................................................................................................................... 36

3.2. Methods ........................................................................................................................... 37

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

3.3. Results ........................................................................................................................... 40

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-α and IFN-γ are HLA-dependent ................................................................. 49

3.4. Discussion ............................................................................................................. 52

4. STABLE COPD PATIENTS PBMC IN VITRO RESPONSES TO RV-1B, COMPARED
   WITH HEALTHY PBMCs ......................................................................................... 55

Abstract .................................................................................................................... 55

4.1. Introduction ........................................................................................................ 56

4.2. Methods ............................................................................................................. 57
   4.2.1. Participants .................................................................................................. 57
   4.2.2. Tissue culture ............................................................................................ 57
   4.2.3. Statistical analysis ..................................................................................... 58

4.3. Results ............................................................................................................... 58
   4.3.1. Clinical characteristics ............................................................................. 58
   4.3.2. Cytokine responses to RV exposure in culture ......................................... 59
   4.3.3. TNF-α release by PBMCs when exposed to RV is reduced in PBMCs from stable 
          COPD patients .............................................................................................. 59
   4.3.4. RV-infection elicits IFN-λ and IFN-γ from co-cultures of COPD patient PBMCs and 
          Calu-3s BECs .................................................................................................. 60
   4.3.5. IFN-λ 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 in vitro 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

4.4. Discussion .......................................................................................................... 64
5. CHARACTERISATION OF CD8+ LYMPHOCYTES FROM BLOOD AND BAL IN STABLE COPD PATIENTS ....................................................................................................................... 67

Abstract ...................................................................................................................................... 67

5.1. Introduction ................................................................................................................................ 68

5.2. Methods ....................................................................................................................................... 70

5.2.1. Participants ................................................................................................................................. 70

5.2.2. Cell isolation and preparation ...................................................................................................... 70

5.2.3. Phenotyping of CD8+ effector cells ........................................................................................... 71

5.2.4. Statistical analysis ...................................................................................................................... 74

5.3. Results .......................................................................................................................................... 75

5.3.1. Clinical characteristics ................................................................................................................ 75

5.3.2. CD8+ T_{EM} is decreased in COPD patient peripheral blood ..................................................... 76

5.3.3. CD8+ activation is negatively correlated to lung function .......................................................... 76

5.3.4. No difference in PD-1 expression on blood CD8+ lymphocytes between groups ................. 78

5.3.5. Clinical characteristics of the bronchoscopy subgroup .............................................................. 79

5.3.6. COPD patients have reduced BAL CD8+ lymphocytes ............................................................ 80

5.3.7. CD8+ lymphocyte proportion in BAL correlates to neutrophil and macrophage percentage ........................................................................................................................................ 80

5.3.8. PD-1 expression on CD8+ lymphocytes and \text{T}_{EM} correlated with levels of the \text{T}_{CM} population ......................................................................................................................................................... 81

5.3.9. No difference in PD-1 expression on BAL CD8+ lymphocytes between groups ................. 82

5.4. Discussion ..................................................................................................................................... 83

6. IMMUNE RESPONSE TO RESPIRATORY PATHOGENS BY PBMCS FROM COPD PATIENTS ........................................................................................................................................ 86

Abstract .......................................................................................................................................... 86
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Introduction</td>
<td>87</td>
</tr>
<tr>
<td>6.2</td>
<td>Methods</td>
<td>89</td>
</tr>
<tr>
<td>6.2.1</td>
<td>Participants</td>
<td>89</td>
</tr>
<tr>
<td>6.2.2</td>
<td>Clinical data</td>
<td>90</td>
</tr>
<tr>
<td>6.2.3</td>
<td>Tissue culture</td>
<td>90</td>
</tr>
<tr>
<td>6.2.4</td>
<td>Flow cytometry gating and cell selection</td>
<td>91</td>
</tr>
<tr>
<td>6.2.5</td>
<td>Statistical analysis</td>
<td>93</td>
</tr>
<tr>
<td>6.3</td>
<td>Results</td>
<td>94</td>
</tr>
<tr>
<td>6.3.1</td>
<td>Exacerbating COPD patients compared to healthy participants</td>
<td>94</td>
</tr>
<tr>
<td>6.3.2</td>
<td>Convalescent COPD patients compared to healthy participants</td>
<td>111</td>
</tr>
<tr>
<td>6.3.3</td>
<td>Exacerbating COPD compared to convalescent COPD patients</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>141</td>
</tr>
<tr>
<td>6.4</td>
<td>Discussion</td>
<td>141</td>
</tr>
<tr>
<td>7</td>
<td>GENERAL DISCUSSION</td>
<td>147</td>
</tr>
<tr>
<td>7.1</td>
<td>Conclusions</td>
<td>150</td>
</tr>
<tr>
<td>7.2</td>
<td>Future Direction</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td>A. REFERENCES</td>
<td>152</td>
</tr>
<tr>
<td></td>
<td>B. MATERIALS</td>
<td>166</td>
</tr>
<tr>
<td></td>
<td>C. PATIENT QUESTIONNAIRES’</td>
<td>171</td>
</tr>
<tr>
<td></td>
<td>D. FULL DATA OUTPUT FROM CHAPTER 6</td>
<td>202</td>
</tr>
</tbody>
</table>
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 DIFFERENT 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 IN VITRO 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-Α AND IFN-Υ PRODUCTION FROM PBMCs 52
FIGURE 17 - RV-1B INDUCED TNF-Α FROM PBMC CULTURES IS REDUCED IN STABLE COPD PATIENTS ................................................................................................................................. 60
FIGURE 18 - COPD PBMC-CALU-3 CO-CULTURES HAVE A REDUCED TNF-Α AND IFN-Α RESPONSE TO RV-1B ................................................................. 61
FIGURE 19 - RV-1B INFECTED COPD PBECs CULTURES HAVE REDUCED IFN-Λ RELEASE .................................................................................. 62
FIGURE 20 - COPD PBMCS-PBECs CO-CULTURES HAD A REDUCED TNF-Α RESPONSE RV-1B ................................................................................................. 63
FIGURE 21 - RV-1B TITRE INCREASED IN CO-CULTURES OF COPD PBMCS-CALU-3S ... 64
FIGURE 22 – GATING OF CD8^+ T LYMPHOCYTE MEMORY CELLS ...................... 71
FIGURE 23 - FLUORESCENCE SPECTRUM VIEWER .................................................. 73
FIGURE 24 - COPD PATIENTS HAVE DECREASED T_Em IN THE PERIPHERAL BLOOD ..... 76
FIGURE 25 - LUNG FUNCTION IS NEGATIVELY CORRELATED WITH CD44 EXPRESSION ON CD8^+ T LYMPHOCYTES IN BLOOD ........................................... 77
FIGURE 26 - PD-1 EXPRESSION ON BLOOD CD8 LYMPHOCYTES CORRELATES WITH T_Em PROPORTION ............................................................................ 77
FIGURE 27 - PD-1 STAINING OF CD8^+ T LYMPHOCYTES ........................................ 78
FIGURE 28 - COPD PATIENTS HAVE REDUCED CD8^+ 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^+ LYMPHOCYTES, PD-1 EXPRESSION ON T_Em, AND THE PERCENTAGE OF T_Cm 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-Υ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS .................................................. 97
FIGURE 36 - RV-1B INDUCED IFN-Α AND IFN-Λ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS ................................. 100
FIGURE 37 - H1N1 INDUCED IFN-Α, IFN-Λ, TNF-Α AND IFN-Υ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS...... 103

FIGURE 38 - SPN INDUCED IFN-Α AND IFN-Υ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS.......................... 106

FIGURE 39 - NTHI INDUCED IFN-Υ 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-Υ IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS ........................................ 114

FIGURE 42 - RV-1B INDUCED IFN-Α IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS ........................................ 116

FIGURE 43 - H1N1 INDUCED IFN-Α IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS ........................................ 118

FIGURE 44 - H1N1 INDUCED PD-1 EXPRESSION ON CD4+ LYMPHOCYTES IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS...... 119

FIGURE 45 - SPN INDUCED IFN-Α IS LOWER IN CONVALESCENT COPD PATIENTS, COMPARED TO HEALTHY PARTICIPANTS ........................................ 121

FIGURE 46 - NTHI INDUCED PD-1 EXPRESSION ON CD4+ 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-1 EXPRESSION ON PDCS IS HIGHER IN EXACERBATING COPD PATIENTS, COMPARED TO CONVALESCENT COPD PATIENTS.......................... 128

FIGURE 49 - PHA-STIMULATED IFN-Υ 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-Α AND IFN-Λ IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED TO CONVALESCENT COPD PATIENTS ........................................ 134

FIGURE 52 - SPN INDUCED IFN-Α IS LOWER IN EXACERBATING COPD PATIENTS, COMPARED WITH CONVALESCENT COPD PATIENTS ........................................ 136

FIGURE 53 - NTHI INDUCED IL-1B AND IFN-Υ 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 FEV₁) ........................................................................................................ 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⁺ BLOOD LYMPHOCYTES ................................................................................................................................. 78

TABLE 5-3 - BAL SUBGROUP CLINICAL CHARACTERISTICS ................................................................................................................................. 79

TABLE 5-4 - MFI OF PD-1 ON CD8⁺ 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 PBMC ........................................................................................................................................... 96

TABLE 6-4 - PD-1 EXPRESSION INDUCTION ON PHA-EXPOSED PBMC ................................................................................................................................. 97

TABLE 6-5 - PD-L1 EXPRESSION INDUCTION ON PHA-EXPOSED PBMC ................................................................................................................................. 98

TABLE 6-6 - PROTEIN INDUCTION FROM RV-EXPOSED PBMC ................................................................................................................................. 99

TABLE 6-7 - INDUCTION OF PD-1 EXPRESSION ON RV-EXPOSED PBMC ................................................................................................................................. 100

TABLE 6-8 - EXPRESSION OF PD-L1 ON RV-EXPOSED PBMC ................................................................................................................................. 101

TABLE 6-9 - PROTEIN INDUCTION FROM PBMC BY H1N1 ........................................................................................................................................... 102

TABLE 6-10 - EXPRESSION OF PD-1 ON H1N1-EXPOSED PBMC ................................................................................................................................. 104
TABLE 6-11 - EXPRESSION OF PD-L1 ON H1N1-EXPOSED PBMCS
TABLE 6-12 - PROTEIN INDUCTION FROM PBMCS BY SPN
TABLE 6-13 - EXPRESSION OF PD-1 ON SPN-EXPOSED PBMCS
TABLE 6-14 - EXPRESSION OF PD-L1 ON SPN-EXPOSED PBMCS
TABLE 6-15 - PROTEIN INDUCTION FROM PBMCS BY NTHI-LIVE
TABLE 6-16 - EXPRESSION OF PD-1 ON NTHI-EXPOSED PBMCS
TABLE 6-17 - EXPRESSION OF PD-L1 ON NTHI-EXPOSED PBMCS

TABLE 6-18 - CLINICAL CHARACTERISTICS OF CONVALESCENT COPD PATIENTS COMPARED TO HEALTHY PARTICIPANTS

TABLE 6-19 - PROTEIN INDUCTION FROM PHA-EXPOSED PBMCS
TABLE 6-20 - PD-1 EXPRESSION INDUCTION ON PHA-EXPOSED PBMCS
TABLE 6-21 - PD-L1 EXPRESSION INDUCTION ON PHA-EXPOSED PBMCS
TABLE 6-22 - CYTOKINE PROTEIN INDUCTION FROM RV-EXPOSED PBMCS
TABLE 6-23 - INDUCTION OF PD-1 EXPRESSION ON RV-EXPOSED PBMCS
TABLE 6-24 - EXPRESSION OF PD-L1 ON RV-EXPOSED PBMCS
TABLE 6-25 - CYTOKINE PROTEIN INDUCTION FROM PBMCS BY H1N1
TABLE 6-26 - EXPRESSION OF PD-1 ON H1N1-EXPOSED PBMCS
TABLE 6-27 - EXPRESSION OF PD-L1 ON H1N1-EXPOSED PBMCS
TABLE 6-28 - CYTOKINE PROTEIN INDUCTION FROM PBMCS BY SPN
TABLE 6-29 - EXPRESSION OF PD-1 ON SPN-EXPOSED PBMCS
TABLE 6-30 - EXPRESSION OF PD-L1 ON SPN-EXPOSED PBMCS
TABLE 6-31 - CYTOKINE PROTEIN INDUCTION FROM PBMCS BY NTHI
TABLE 6-32 - EXPRESSION OF PD-1 ON NTHI-EXPOSED PBMCS
TABLE 6-33 - EXPRESSION OF PD-L1 ON NTHI-EXPOSED PBMCS

TABLE 6-34 - CLINICAL CHARACTERISTICS OF EXACERBATING COPD PATIENTS COMPARED TO CONVALESCENT COPD PATIENTS

TABLE 6-35 - CYTOKINE PROTEIN INDUCTION FROM PHA-EXPOSED PBMCS
TABLE 6-36 - PD-1 EXPRESSION ON PHA-EXPOSED PBMCS
TABLE 6-37 - PD-L1 EXPRESSION ON PHA-EXPOSED PBMCS
TABLE 6-38 - CYTOKINE PROTEIN INDUCTION FROM RV-EXPOSED PBMCS
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

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-AAD</td>
<td>7-Aminoactinomycin D</td>
</tr>
<tr>
<td>APC</td>
<td>antigen presenting cell</td>
</tr>
<tr>
<td>ATCC</td>
<td>American Type Culture Collection</td>
</tr>
<tr>
<td>BAL</td>
<td>bronchial alveolar lavage</td>
</tr>
<tr>
<td>BEC</td>
<td>bronchial epithelial cell</td>
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<tr>
<td>CAT</td>
<td>COPD Assessment Test</td>
</tr>
<tr>
<td>CBA</td>
<td>Cytometric Bead Array</td>
</tr>
<tr>
<td>CCQ</td>
<td>Common Cold Questionnaire</td>
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<tr>
<td>CD</td>
<td>cluster of differentiation</td>
</tr>
<tr>
<td>CFSE</td>
<td>carboxyfluorescein succinimidyl ester</td>
</tr>
<tr>
<td>cfu</td>
<td>colony forming units</td>
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<tr>
<td>COPD</td>
<td>Chronic Obstructive Pulmonary Disease</td>
</tr>
<tr>
<td>CSE</td>
<td>cigarette smoke extract</td>
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<tr>
<td>CXCL</td>
<td>chemokine (C-X-C motif) ligand</td>
</tr>
<tr>
<td>CXCR</td>
<td>chemokine (C-X-C motif) receptor</td>
</tr>
<tr>
<td>dsRNA</td>
<td>double-stranded ribonucleic acid</td>
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<tr>
<td>ELISA</td>
<td>enzyme linked immunosorbent assay</td>
</tr>
<tr>
<td>ELIspot</td>
<td>Enzyme-Linked ImmunoSpot</td>
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<tr>
<td>FACs</td>
<td>Fluorescence-activated cell sorting</td>
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<tr>
<td>FCS</td>
<td>fetal calf serum</td>
</tr>
<tr>
<td>FEV₁</td>
<td>forced expiratory volume in one second</td>
</tr>
<tr>
<td>FSC</td>
<td>forward scatter</td>
</tr>
<tr>
<td>FVC</td>
<td>forced vital capacity</td>
</tr>
<tr>
<td>GOLD</td>
<td>Global Initiative of Chronic Obstructive Lung Disease</td>
</tr>
<tr>
<td>H1N1</td>
<td>haemagglutinin 1 neuraminidase 1</td>
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<td>human leukocyte antigen</td>
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<td>HMRI</td>
<td>Hunter Medical Research Institute</td>
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<tr>
<td>hr</td>
<td>hour</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>ICS</td>
<td>inhaled corticosteroids</td>
</tr>
<tr>
<td>IFN</td>
<td>interferon</td>
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<tr>
<td>IL</td>
<td>interleukin</td>
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<tr>
<td>LPS</td>
<td>lipopolysaccharide</td>
</tr>
<tr>
<td>mDC</td>
<td>myeloid dendritic cells</td>
</tr>
<tr>
<td>MHC</td>
<td>major histocompatibility complex</td>
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<tr>
<td>MFI</td>
<td>median intensity fluorescence</td>
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<td>MOI</td>
<td>multiplicity of infection</td>
</tr>
<tr>
<td>NK</td>
<td>natural killer</td>
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<td>NTHi</td>
<td>non-typeable <em>haemophilus influenzae</em></td>
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<td>OCS</td>
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<tr>
<td>pam3cys4K</td>
<td>palmitoyl-3-cysteine</td>
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<td>pBEC</td>
<td>primary bronchial epithelial cell</td>
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<td>PBMC</td>
<td>peripheral blood mononucleocytes</td>
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<td>PBS</td>
<td>phosphate-buffered saline</td>
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<tr>
<td>PC</td>
<td>physical containment</td>
</tr>
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<td>programmed death-1</td>
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<td>pDC</td>
<td>plasmacytoid dendritic cells</td>
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<td>PD-L1</td>
<td>programmed death-ligand 1</td>
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<td>polyinosinic-polycytidylic acid</td>
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<td>pattern recognition receptor</td>
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<td>Roswell Park Memorial Institute</td>
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<td>RNA</td>
<td>ribonucleic acid</td>
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<td>RSV</td>
<td>respiratory syncytial virus</td>
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<tr>
<td>RV</td>
<td>rhinovirus</td>
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<td>Abbreviation</td>
<td>Definition</td>
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<td>--------------</td>
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<tr>
<td>Spn</td>
<td><em>streptococcus pneumoniae</em></td>
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<td>side scatter</td>
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<td>single-stranded ribonucleic acid</td>
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<td>TCID&lt;sub&gt;50&lt;/sub&gt;</td>
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<td>T lymphocyte central memory cell</td>
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<td>T-cell receptor</td>
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<tr>
<td>TEM</td>
<td>T lymphocyte effector memory cell</td>
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<tr>
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<td>Toll-like receptor</td>
</tr>
<tr>
<td>TNF</td>
<td>tumour necrosis factor</td>
</tr>
<tr>
<td>UV</td>
<td>ultra-violet</td>
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<tr>
<td>WBC</td>
<td>white blood cell</td>
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