ASX Release

26 May 2010

Immuron Ltd
ABN 80 063 114 045

Corporate Details:

ASX Code: IMC

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Mr Simon Sallka
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Chief Executive Officer
Dr Grant Rawlin

Major Shareholder
Hadasit Medical Research 19.56%

Immuron and University of Melbourne technology presented at an International HIV prevention conference.

Melbourne and Sydney, Australia, 26th May, 2010:

Immuron (ASX: IMC) announces that Dr Marit Kramski has presented a poster at the 2010 International HIV Microbicides conference in Pittsburgh Pennsylvania. The poster demonstrates that Immuron's antibody product successfully neutralises HIV (Human Immunodeficiency Virus) transmission *in vitro* and discusses its potential as a preventative against HIV transmission. Dr Kramski is a member of Dr Damian Purcell's laboratory at the University of Melbourne, Department of Microbiology and Immunology which is collaborating with Immuron on this project.

The research team at the University of Melbourne found that the antibodies, generated in cattle and isolated from colostrum, strongly neutralised many isolates of HIV, thus preventing the virus's ability to infect cells. This work led to further funding (see IMC ASX announcement of 21st April 2010) for proof-of-principle work to investigate if the antibodies made by combining vaccine technologies from the University of Melbourne group, and production technologies from Immuron, could provide the basis for a safe 'microbicide' method of prevention of HIV transmission.

Chief Executive Officer of Immuron Ltd, Dr Grant Rawlin, commented, "A key attraction of this approach to developing a microbicide is that colostrum antibody production is easy to scale-up at a reasonable cost and the product is likely to be suitable for topical use. We eagerly await the results of further research which we anticipate will confirm the efficacy of these results and pave the way for human clinical trials".

Dr Grant Rawlin
Chief Executive Officer

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About Immuron Limited,
Immuron is a biopharmaceutical company focused on oral immunotherapy using dairy-derived polyclonal antibody products for humans. Current products target infectious diseases of the gastrointestinal tract, while more recent projects are targeting immunotherapy to influence chronic diseases such as diabetes type 2 and fatty liver (NASH), and to prevent and treat respiratory infection with influenza. Immuron's main scientific alliances are with Hadassah Medical Centre (Israel) and University of Melbourne (Australia).

About HIV and Microbicides:
It is estimated that 35 million people across the globe are infected with HIV. The medical cost of HIV in the US alone is estimated to be approximately US$15 billion per year. In some countries public health programs have achieved modest gains in reducing HIV transmission through behavioural changes, but the worldwide picture is one of increasing rates of infection. Although the use of condoms has slowly increased in countries most severely affected by the HIV epidemic, many vulnerable women are unable to ensure that they are used. An effective and affordable vaginal microbicide, whose use could be controlled by women, would represent an important addition to the battle against HIV infection.

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Potent Low-Cost Neutralising Antibodies against HIV-1 from Hyperimmune Bovine Colostrum

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Background and Aims:

Newborn mammals derive significant passive immunity from the first milk (colostrum) that contains antiviral proteins and peptides that assist in stimulating appropriate innate antiviral pathways and adaptive immune responses. High concentrations of maternal immunoglobulin is drawn into the colostrum during pregnancy, resulting in IgG concentrations of up to 200mg/ml. The vaccination of pregnant cows against HIV envelope (Env) results in polyclonal HIV Env-specific antibodies in the colostrum. Colostrum derived anti-HIV antibodies with neutralising ability may be used as a potent topical microbicide. Colstrum antibody production has scale-up potential and the approach is feasible for the development of a passive mucosal-administered microbicide containing neutralising antibodies.

Growth Factors		
IGF-1	1540	ng/g
IGF-2	748	ng/g
TGF-β 1	18	ng/g
TGF-β 2	863	ng/g
Immune/Antibacterial/Antiviral Enzymes		
IgG1	20-200	mg/ml
IgG2	12	mg/ml
IgM	3.7-6.1	mg/ml
IgA	3.2-6.2	mg/ml
Lactoferrin	5-100	mg/L
Lysozyme	0.14-0.7	mg/L
Lactoperoxidase	11-45	mg/L

Table 1: Overview of important proteins in bovine colostrum source: *http://www.colostrumresearch.org/generatedItems/colostrum_info/*

In this study we examine whether neutralising antibodies can be generated which might match the protective properties of human neutralising monoclonal-antibodies.

Methods:

- Production and purification of soluble trimeric clade A (UG8), B (AD8) and C (MW) HIV-1 Env gp140 oligomers by lentil lectin affinity chromatography and gel filtration

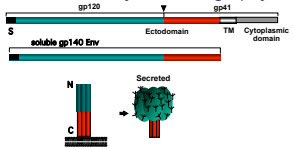


Figure 1: Cartoon of the soluble trimeric gp140 envelope (Env) protein

- Intramuscular vaccination of 4 cows
  → 2 pregnant (P) and 2 non-pregnant (NP) three times with 100µg gp140 Env (vaccination regime Figure 2)
- Serum IgG titre was monitored by ELISA
- Colostrum collection from all 4 cows
- Env gp140 specificity of serum and colostrum antibodies was tested by Western Blot
- Pseudovirus production: 27 Env-pseudotyped reporter viruses (including NIH reference panel for clade B and C Env clones (ARRP #11227, #11326)
- Measurement of neutralising activity of unfractionated HIV-immune colostrum in Env-pseudotyped reporter virus assay
- IgG purification from colostrum using sepharose G

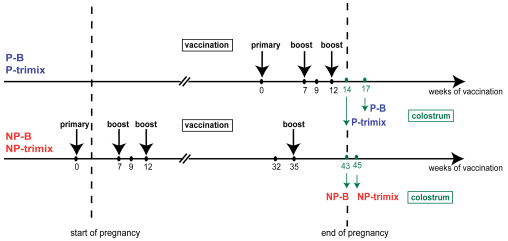
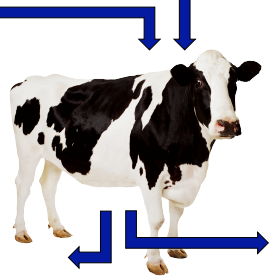


Figure 2: Vaccination strategy

Antigen-gp140 Env type	Pregnant cows (P) at primary vaccination
Clade B	P-B
Clade A/B/C	P-trimix
	Non-pregnant cows (NP) at primary vaccination
Clade B	NP-B
Clade A/B/C	NP-trimix



PSV/Env clone	Clade	% Neutralisation P-B	P-trimix	NP-B	NP-trimix	non-immune
AD8	B	59.1	78.9	74.3	10.6	64.0
MN	B	27.8	54.1	92.4	73.3	31.0
SF162	B	44.3	75.2	68.9	33.6	30.9
NL4.3	B	66.2	77.1	59.1	29.9	49.7
89.6	B	48.5	77.9	75.0	38.2	30.1
6535 clone 3 SVPB5	B	51.6	63.7	81.7	47.0	37.3
QH0692 clone 42 (SVPB6)	B	55.8	89.7	88.1	6.7	43.4
PVO clone 4 SVPB11	B	25.5	55.6	92.9	25.0	25.2
TRO clone 11, SVPB12	B	30.4	65.9	77.7	33.7	34.7
Ac10.0 clone 29 SVPB13	B	25.5	63.1	77.2	32.7	28.4
pWITO4160 clone33	B	37.2	53.6	83.8	40.7	31.2
pTRJO4551 clone 18	B	4.8	52.3	89.4	31.1	15.5
pREJO4541 clone 67	B	15.2	63.1	79.5	15.8	26.3
pRHPA4259 clone 7	B	12.6	55.4	93.3	35.8	13.6
SC422661.8 (SVPB8)	B	5.7	61.7	93.3	26.1	26.5
DU 156.12	C	16.2	43.7	42.8	26.7	28.6
DU 172.17	C	41.3	73.8	68.9	19.0	54.0
ZM 197M.PB7	C	29.7	52.3	73.1	41.8	41.8
ZM 214M.PL15	C	8.2	50.0	67.7	32.4	36.2
ZM 233M.PB6	C	33.5	61.7	77.4	49.2	30.3
ZM 249M.PL1	C	30.1	51.0	83.5	19.6	36.5
ZM53M.PB12	C	25.1	50.2	88.3	30.6	23.7
ZM109F.PB4	C	19.7	47.7	81.5	28.8	22.2
ZM135M.PL10a	C	32.3	80.1	86.9	4.1	30.1
CAP45.2.00.G3	C	34.5	33.7	57.9	28.5	37.2
CAP210.2.00.E8	C	50.0	55.1	87.0	40.8	50.0
966	A/E	10.8	30.8	94.6	27.6	13.7

Table 2: Neutralisation profile for colostrum of all 4 vaccinated cows in comparison to non-immune colostrum; data shown for a colostrum dilution of 1:16; PSV: Env-pseudotyped reporter viruses; ; representative experiment from 2 independent experiments

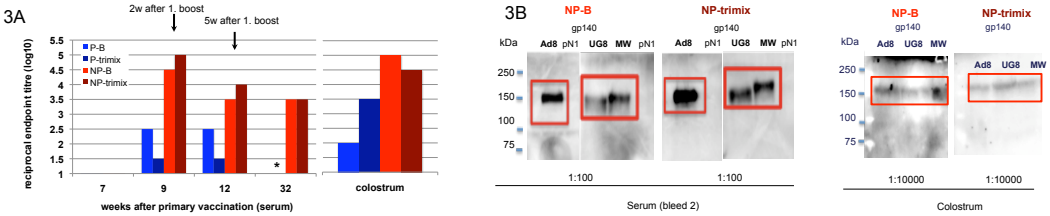


Figure 3: A.) IgG titre in serum and colostrum determined by AD8 gp140 ELISA, * no bleed for P-B and P-trimix; and B) HIV Env gp140 specificity of serum and colostrum IgG for NP cows (Western Blot analysis: supernatant of Env gp140 or empty vector_pN1 transfected cells; 1Ab: bovine sera or colostrum; 2.Ab: α-bovine IgG-HRP 1:1000)

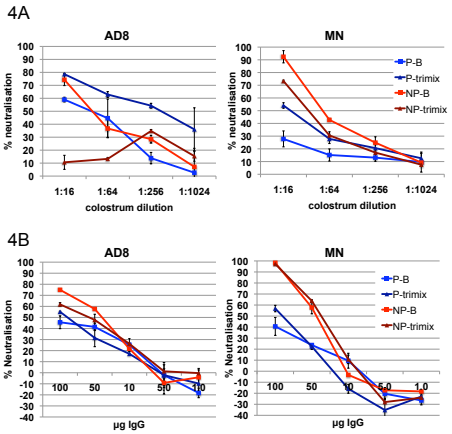


Figure 4: Neutralising activity for A.) colostrum and B.) colostrum purified IgG of all 4 vaccinated cows for 2 Env-peusotyped reporter viruses (clade B); AD8-hard to neutralise; MN- easy to neutralise

Results and Conclusion:

- Vaccination strategy yielded high titres of anti- HIV Env polyclonal antibodies in bovine sera and colostrum (n=3/4)
- Non-immune colostrum demonstrated neutralising activity
- Broad and high HIV-1 neutralising activity for 2/3 colostrum samples (for 1:16 dilution) for CCR5- and CXCR4-tropic HIV-1
- Purified IgG retained neutralising activity in high concentrations ≥ 500µg/ml

Future Experiments: (i) assess neutralising activity of neat colostrum and colostrum purified antibodies under pH levels 4-7 and in the presence of seminal plasma and vaginal secretions; (ii) determination of neutralisation activity of colostrum components; (iii) determination of anti-transcytosis activity of colostrum; (iv) formulation of potent candidates into a microbicide gel

Acknowledgements: We thank the Australian Centre for HIV and Hepatitis Virology Research for funding of this project.