

Patient Name SAMPLEREP,LPMAF	Patient ID SA00057308	Age 46	Gender F	Order # SA00057308
Ordering Phys CLIENT,CLIENT				DOB 06/10/1966
Client Order # SA00057308	Account Information			Report Notes
Collected 05/08/2013 00:00	C7028846-DLMP Rochester 3050 Superior Drive Rochester, MN 55901			
Printed 06/13/2013 15:29				

Test	Flag	Results	Unit	Reference Value	Perform Site*
------	------	---------	------	-----------------	---------------

Lymphocyte Proliferation Panel
RECEIVED: 05/09/2013 15:22 **REPORTED:** 06/13/2013 14:23

Lymphocyte Proliferation, Mitogens

Interpretation

MCR

Significantly decreased proliferative response to both mitogens - PHA and PWM. PHA is a potent T cell mitogen, therefore, the almost complete lack of response to this stimulant suggests an impairment in global T cell function.

There are several clinical contexts in which such decreased proliferative response to PHA may be observed, including immunosuppressive/immunomodulatory therapy for solid-organ transplantation, autoimmunity, allogeneic HCT or ineffective functional T cell reconstitution post-autologous HCT, and combined immunodeficiencies (adult-onset or adult-manifestation). This assay is sensitive in that it is not affected by cellular dilution due to T cell lymphopenia. Abnormal T cell response to mitogens is diagnostically more specific but less sensitive of impaired T cell function. There is no linear correlation between the magnitude of immune compromise and the decrease in proliferative response to PHA. Mitogen proliferation result should always be interpreted in context of clinical history and other appropriate immunological evaluation. Day 0 viability was normal and did not affect the proliferative response to mitogens. Data are expressed as % proliferating cells of total specific cell population. The % Day 0 viability of the sample was determined using a flow cytometry assay which includes individual assessment of viable, apoptotic and dead cells. This method differs from the commonly used method of trypan blue dye exclusion which only identifies dead cells, and counts apoptotic cells along with the viable cells, resulting in an apparent higher cell viability. However, apoptotic cells do not contribute to cell proliferation and therefore accurate measurement of only viable cells provides meaningful information on the cells involved in stimulation and proliferative response. Strongly recommend using "critical ambient shipping boxes" available through Mayo Medical Laboratories (MML) inventory to ensure optimal transport of critical samples used for functional cellular assays.

Analyte Specific Reagent: This test was developed and its performance characteristics determined by Mayo Clinic. It has not been cleared or approved by the U.S. Food and Drug Administration.

Viab of Lymphs at Day 0		93.2	%	>=75.0	MCR
Max Prolif of PWM as % CD45	L	1.7	%	>=4.5	MCR
Max Prolif of PWM as % CD3	L	1.2	%	>=3.5	MCR
Max Prolif of PWM as % CD19	L	0.8	%	>=3.9	MCR
Max Prolif of PHA as % CD45	L	4.2	%	>=49.9	MCR

Performing Site Legend on Last Page of Report

Patient Name SAMPLEREPORT,LPMFAF	Collection Date and Time 05/08/2013 00:00	Report Status Final
Page 1 of 3		>> Continued on Next Page >>

* Report times for Mayo performed tests are CST/CDT

Patient Name SAMPLEREP,LPMAF	Patient ID SA00057308	Age 46	Gender F	Order # SA00057308
Ordering Phys CLIENT,CLIENT				DOB 06/10/1966
Client Order # SA00057308	Account Information			Report Notes
Collected 05/08/2013 00:00	C7028846-DLMP Rochester 3050 Superior Drive Rochester, MN 55901			
Printed 06/13/2013 15:29				

Test	Flag	Results	Unit	Reference Value	Perform Site*
Max Prolif of PHA as % CD3	L	2.7	%	>=58.5	MCR
Mitogen Comment					MCR
<p>Lymphocyte proliferative responses are affected by sample age. Samples received between 24-48 hours post-collection can show significant decrease in lymphocyte proliferative responses. Caution should be used when interpreting the results and clinical correlation is strongly recommended. Suggest repeat testing when clinically appropriate.</p>					
Lymphocyte Proliferation, Antigens Interpretation					MCR
<p>Decreased proliferative response to Candida (CA) and essentially absent proliferation to Tetanus toxoid (TT). The TT result may reflect waning antigen (TT)-specific T cell memory due to time elapsed since vaccination. Recommend re-evaluation 4-6 weeks after TT vaccination, if clinically appropriate. Approximately one-third and 1/4th of healthy adults appear to have diminished responses to CA and TT respectively. Abnormal T cell responses to antigens are diagnostically more sensitive but less specific of impaired T cell function. Antigen proliferation result should always be interpreted in context of patient age, vaccination status (for TT), clinical history and other appropriate immunological evaluation. Day 0 viability was normal and did not contribute to the decreased proliferative response to antigens.</p> <p>Data are expressed as % proliferating cells of total specific cell population. The % Day 0 viability of the sample was determined using a flow cytometry assay which includes individual assessment of viable, apoptotic and dead cells. This method differs from the commonly used method of trypan blue dye exclusion which only identifies dead cells, and counts apoptotic cells along with the viable cells, resulting in an apparent higher cell viability. However, apoptotic cells do not contribute to cell proliferation and therefore accurate measurement of only viable cells provides meaningful information on the cells involved in stimulation and proliferative response. Strongly recommend using "critical ambient shipping boxes" available through Mayo Medical Laboratories (MML) inventory to ensure optimal transport of critical samples used for functional cellular assays.</p> <p>Analyte Specific Reagent: This test was developed and its performance characteristics determined by Mayo Clinic. It has not been cleared or approved by the U.S. Food and Drug Administration.</p>					
Viab of Lymphs at Day 0		93.2	%	>=75.0	MCR
Max Prolif of CA as % CD45	L	1.1	%	>=5.7	MCR
Max Prolif of CA as % CD3	L	0.9	%	>=3.0	MCR
Max Prolif of TT as % CD45	L	0.8	%	>=5.2	MCR
Max Prolif of TT as % CD3	L	0.7	%	>=3.3	MCR

Performing Site Legend on Last Page of Report

Patient Name SAMPLEREPORT,LPMFAF	Collection Date and Time 05/08/2013 00:00	Report Status Final
Page 2 of 3		>> Continued on Next Page >>

* Report times for Mayo performed tests are CST/CDT

Patient Name SAMPLEREPOR,LPMFAF	Patient ID SA00057308	Age 46	Gender F	Order # SA00057308
Ordering Phys CLIENT,CLIENT				DOB 06/10/1966
Client Order # SA00057308	Account Information			Report Notes
Collected 05/08/2013 00:00	C7028846-DLMP Rochester 3050 Superior Drive Rochester, MN 55901			
Printed 06/13/2013 15:29				

Test	Flag	Results	Unit	Reference Value	Perform Site*
Antigen Comment		Lymphocyte proliferative responses are affected by sample age. Samples received between 24-48 hours post-collection can show significant decrease in lymphocyte proliferative responses. Caution should be used when interpreting the results and clinical correlation is strongly recommended. Suggest repeat testing when clinically appropriate.			MCR

* Performing Site:

MCR	Mayo Clinic Laboratories - Rochester Main Campus 200 First St SW Rochester, MN 55905	Lab Director:
-----	---	---------------

Patient Name SAMPLEREPORT,LPMFAF	Collection Date and Time 05/08/2013 00:00	Report Status Final
Page 3 of 3		** End of Report **

* Report times for Mayo performed tests are CST/CDT