



Public Health
England

Lyme disease conference

RIPPL assays and service

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9 October 2013



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Overview

Who we are and what we do

Tests for Lyme Disease

How we report information

Our clinical service

Other tests & when we will apply them





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Lyme service at RIPL

Started 1 June 2012

Fully automated testing

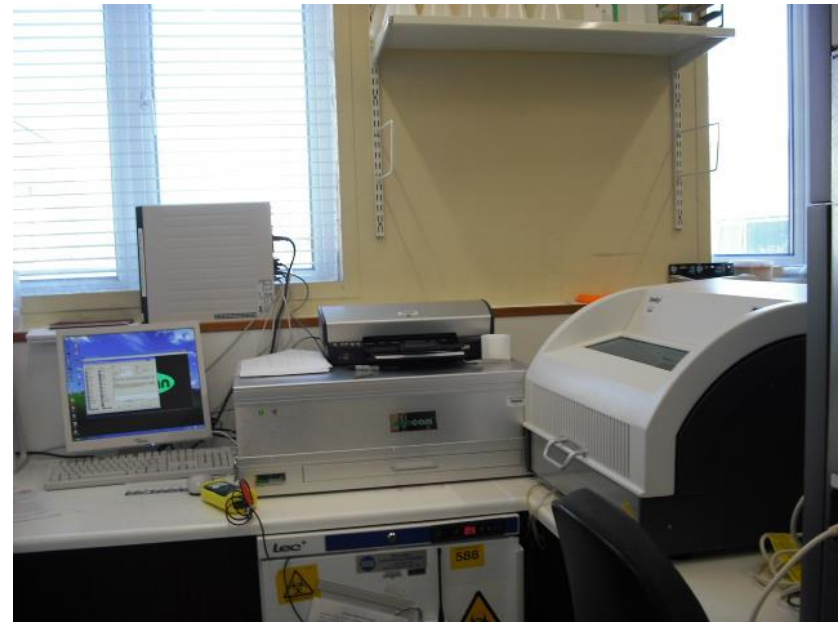
Allows paperless data transfer

Based on C6 ELISA as screen

Immunelectrics® IgM/IgG combination

Virastripe printed blots

Read by densitometer





Blots

Western blot analysis software interface for Borrelia burgdorferi IgG. The interface displays a gel image with bands, a data table, and patient information.

Western Blot Image:

positive Control	Bands	Test-Step
+	VbE	VbE
+	p14	p14
+	DbpA	DbpA
+	Op17	Op17
+	p21	p21
+	OpC	OpC
+	p30	p30
+	p39	p39
+	p41	p41
+	p43	p43
+	p58	p58
+	p63	p63
+	Separator	Separator
+	Cut-off	Cut-off

Table:

p83	p58	p43	p41	p39	p30	OpC	p21	Op17	DbpA	p14	VbE
400	50	1153	-	345	1103	221	350	262	278	331	403

Form Fields:

Patient Name: [pos 0]
Date of Birth: [00/00/0000]
Laboratory: []
Examined: []
Date: [07/05/2013]
Patient-ID: []
Syndicator: []

Evaluation:
IgG antibodies against Borrelia detectable. Infection with Borrelia spec. is very likely. If a recent infection is suspected, check additionally for IgM-antibodies and possible check a second sample for IgG- and IgM-antibodies after 2-4 weeks.

Transmission: Positive No

Buttons: End, Cancel, <<, >>



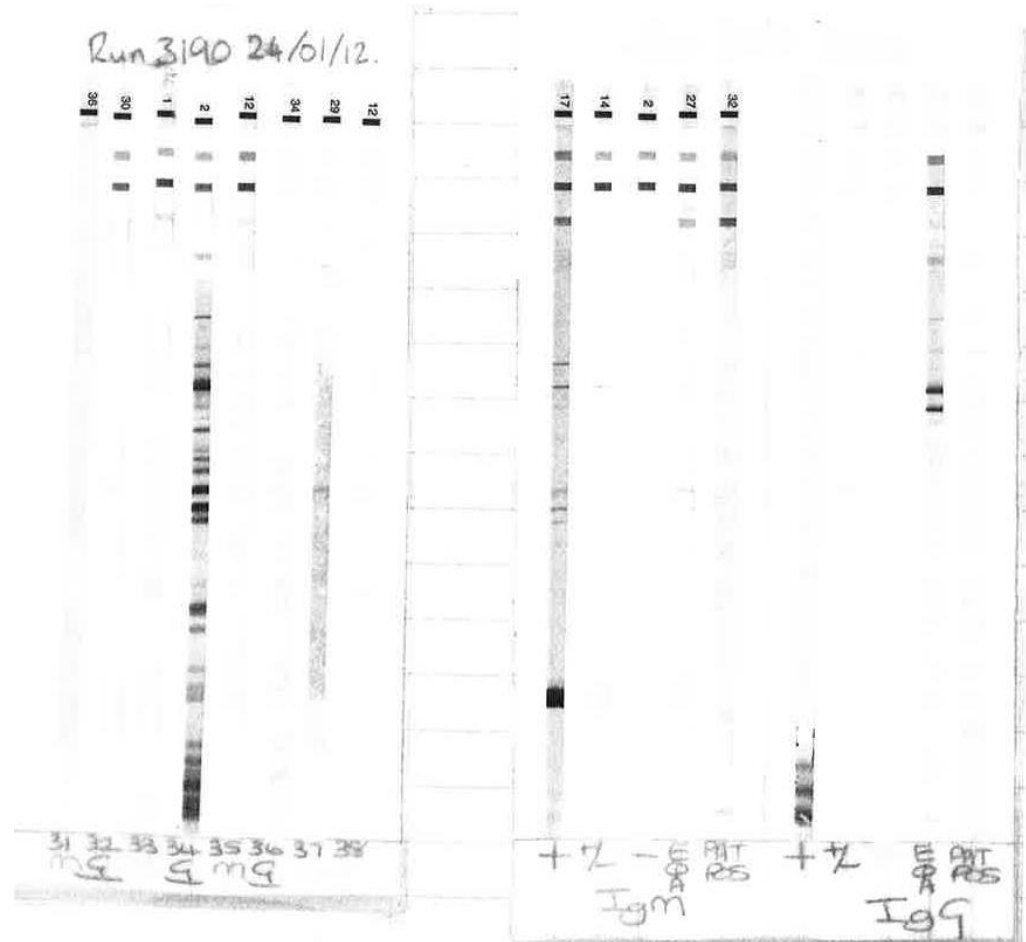
Why use a printed blot?

Defined bands

Machine readable

No background

Only the bands you want





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Wider testing

Bartonella

Currently via Colindale

Rickettsia

EuroImmune IF IgM & IgG

Anaplasma/Ehrlichia

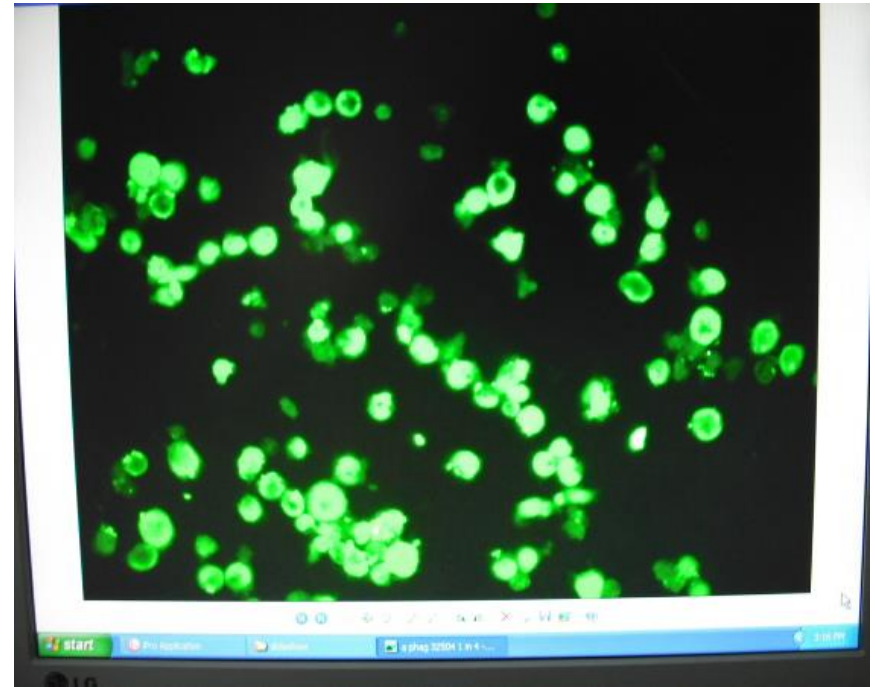
Babesia

Via HTD

Other tick borne diseases

Q fever, tularemia,
TBE complex, bunyaviruses

Other infectious causes of symptoms



Anaplasma phagocytophilum
semi-automated
immunofluorescence test



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Finding the organism

Sampling & errors

Skin best

Blood

CSF & synovium

Biological limitations

Culture

One time “Gold Standard”

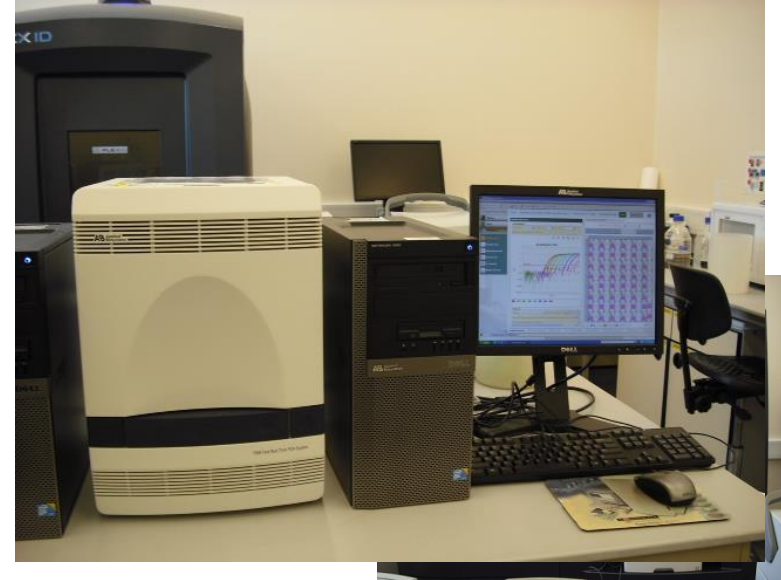
New techniques available

PCR

Real-time PCR based on Fla gene

Sensitive within limits above (~50%)

Can be combined with culture



Reporting the result

B.BURGDORFERI IgG/IgM (C6 EIA)

POSITIVE

Borrelia IgM Lineblot (virastripe)

IgM to Borrelia P41 antigen	POSITIVE
IgM to Borrelia P39 antigen	Negative
IgM to Borrelia OspC antigen	POSITIVE
IgM to Borrelia Osp17 antigen	Negative
IgM to Borrelia VlsE antigen	Negative

Borrelia IgM Lineblot interpretation POSITIVE

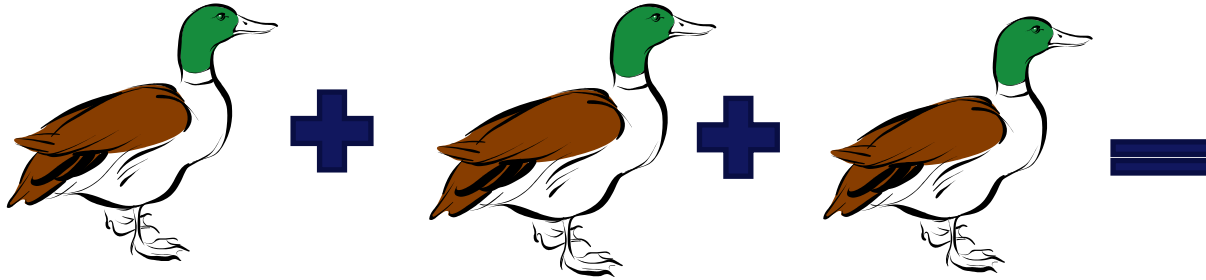
Borrelia IgG Lineblot (virastripe)

IgG to Borrelia P83 antigen	Negative
IgG to Borrelia P58 antigen	Negative
IgG to Borrelia P43 antigen	Negative
IgG to Borrelia P39 antigen	Negative
IgG to Borrelia P30 antigen	Negative
IgG to Borrelia OspC antigen	POSITIVE
IgG to Borrelia p21 antigen	Negative
IgG to Borrelia Osp17 antigen	Negative
IgG to Borrelia DBPA antigen	POSITIVE
IgG to Borrelia P14 antigen	Negative
IgG to Borrelia VlsE antigen	POSITIVE

Borrelia IgG Lineblot interpretation POSITIVE

Compsote report
for early acute
Lyme Disease

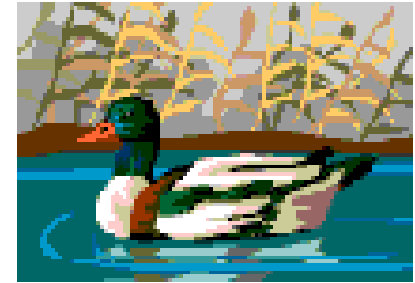
Interpreting the answers: Duck Test



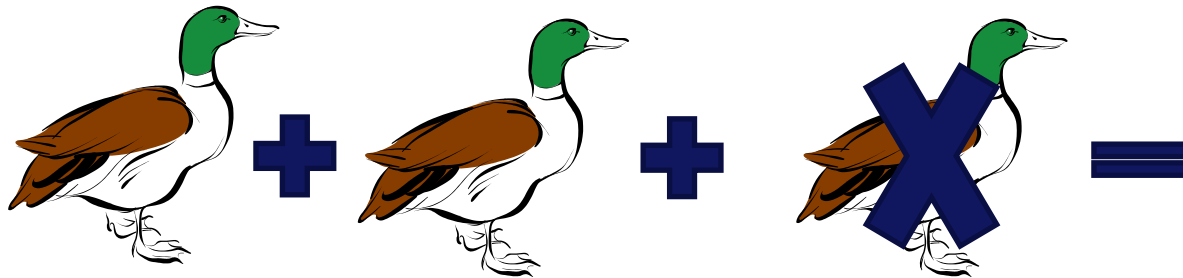
Looks like a duck

Waddles

Quacks



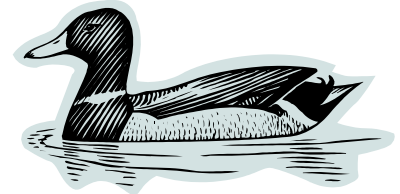
It's a duck!



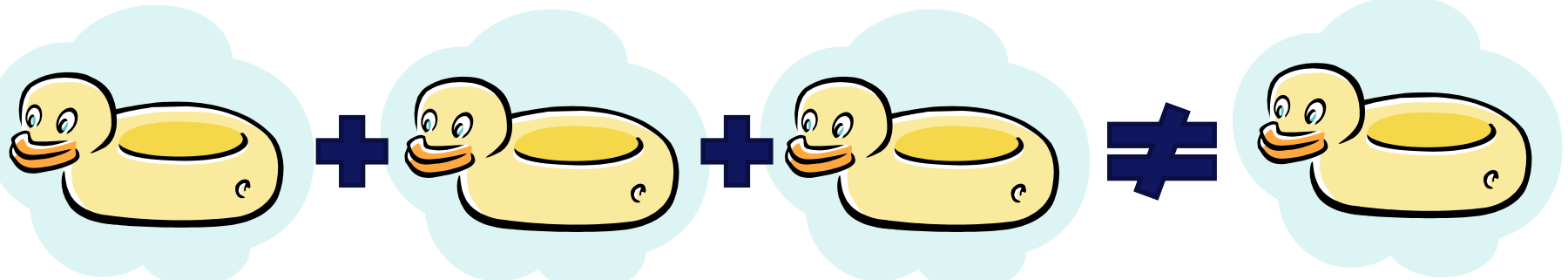
Looks like a duck

Waddles

No quack



Probably a duck



Wrong look

Can't waddle

Mute

Not a duck...



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Test figures 2012-13

Data from 1 June 2012 to 31 May 2013

Total C6 tests 12,742

4,187 tested by Virastripe blot

1569 confirmed positives



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Clinical Service

RIPL offers helpline for clinicians

01980 612348

Appointed Dr Matt Dryden as Lyme Champion

Matt will start a clinic in S. England

Discussing options to support ID physicians in other centres



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Patient services

Website to be updated

Annual Open day

Downloadable leaflets to be made available

Why we do not take direct enquiries

Patient confidentiality & identification of caller

We do not have access to full medical notes

We do not have access to haematology, biochemistry and other pathology data

We cannot see the patient and hence make any clinical assessment

= Bad medicine for a tertiary referral service



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Other tests

All RIPL and associated lab tests are available if indicated

This involves a detailed discussion with the patient's doctor

- To choose correct tests

- To ensure we have the right information and history

- To recommend any other investigations that should be done

Our aim is to help find the cause of the illness by looking for potential infectious origins



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Summary

RIPL offers a wide service for less common diseases

Lyme is part of the array of tests offered

Diagnosis is based on C6 and blot

Clinical details are part of interpretation

We treat credible cases even if they meet only some of the lab criteria if the coat fits

We have a medical help line for physicians at various levels depending on urgency



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