

Labmaster LUCIA™ Canine CRP Kit

Product number: LM519, LM520



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1. Intended Use

Labmaster LUCIA™ Canine CRP test is an in vitro veterinary diagnostic test for the quantitative determination of C-reactive protein (CRP) from dog whole blood as an aid in monitoring acute and systemic inflammation and treatment response. Labmaster LUCIA™ Canine CRP is to be used with the semi-automated Labmaster LUCIA™ Vet Analyzer by veterinarians, laboratory professionals and animal attendants.

2. Clinical Significance and Summary of the Test

Canine CRP is a valuable diagnostic marker for the detection of the acute phase response. Its concentration has been shown to increase rapidly during systemic inflammation in various disorders including viral and bacterial infections, sepsis and pyometra, as well as in surgical trauma. It has been suggested to be useful in monitoring a possible post-surgical infection and of antibiotic treatment response in dogs with bacterial pneumonia. CRP may help reduce the use of unnecessary antibiotics in dogs. (i, ii)

Product Number	Tests/Kit	Measuring Range	Unit	Measuring Time
LM519	10	10–200 whole blood	mg/L	6 minutes
LM520	20	10–120 plasma, serum		

3. Suitable Sample Material

Sample Material	Blood Collection Tube	Notice	Sample Volume	Diluted Sample Stability
Whole blood in	EDTA tube	Mix whole blood by inverting the tube several times.	10 µL	1h in room temperature
Whole blood in	Li-Heparin tube	Mix whole blood by inverting the tube several times.		
Plasma separated from	EDTA tube	Multiply result by factor 0.6.		
Plasma separated from	Li-Heparin tube	Multiply result by factor 0.6.		
Serum	Serum Tube	Multiply result by factor 0.6.		

4. Interpretation of Results

The reference range for a healthy dog is generally in the range of 0 to 10 mg/L (i). When interpreting the LUCIA test results, take into consideration the dog's medical history and other laboratory results. Measurement from whole blood is based on the assumption that the volume of red blood cells is 40% of the total sample volume.

Canine CRP concentrations in acute phase reactions	Interpretation (i)
< 10 mg/L	Normal
> 10 mg/L	Elevated

5. Kit Components

Component Name	Item No.	Pcs / 10-test Kit	Pcs / 20-test kit	Notice
Canine CRP Cassette	C533	10	20	Contains Tween, disodium tetraborate decahydrate, sodium azide, bovine serum albumin, bovine gamma globulin.
Dilution Tube 1.8 mL	SA529	10	20	Contains Tween, sodium azide, bovine serum albumin, bovine gamma globulin.
Canine CRP NFC Card	LA537	1	1	For multiple use, do not discard after measurement. Contains lot specific calibration information. Do not use with other lots.
Instructions for use	LA534	0	1	See also instructional video at www.labmaster.fi .

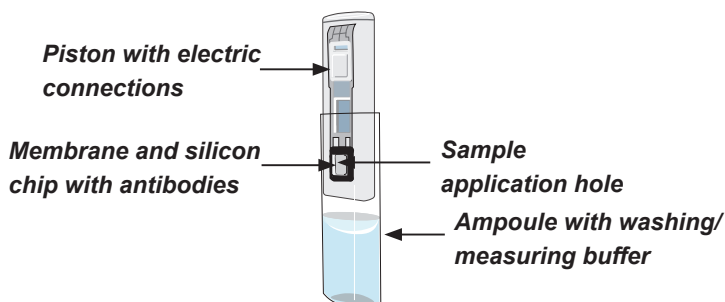
Materials Required but not Provided with the Kit

Product Name	Item no.
Labmaster LUCIA™ Vet analyzer	LM127
Labmaster LUCIA™ Vet analyzer instructions for use	LM128
Recommended: 10 µL Single Volume Pipette	LM510
Recommended: 10 µL Filter tip rack	LM511

6. Storage

Store LUCIA Kit at +2 ... +8 °C.

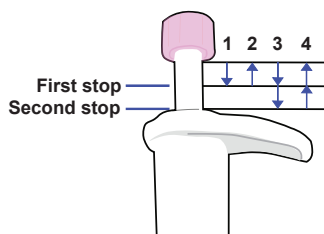
7. Cassette Components



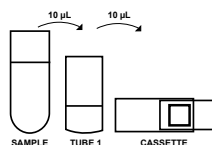
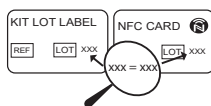
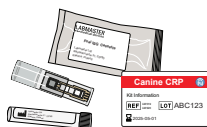
Labmaster LUCIA™ Cassette

8. Guide to Pipetting

1. Press the plunger to the first stop.
2. Insert the pipette tip just under the surface of the liquid and slowly release the plunger up.
3. Dispense the liquid by pressing the plunger to the first stop. After a delay of approximately one second, continue to press the plunger all the way to the second stop.
4. Withdraw the pipette tip from the liquid and release the plunger. DO NOT release the plunger while the tip is in the liquid. Change the pipette tip and continue pipetting.



9. Assay Protocol



Components needed for one test:

- 1 cassette
- 1 dilution tube
- 1 NFC Card (used for all tests in the kit)
- 10 µl pipette and 10 µl filter tips

Check the NFC Card and component lots

Before measurement, ensure that NFC Card lot information corresponds to Kit lot, Cassette and Dilution Tube lot numbers.

10. Detailed Assay Instructions

Dilute the Sample

1. Mix Blood Sample

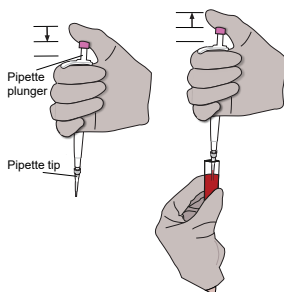
Mix the whole blood sample.



2. Aspirate Sample

Place an unused pipette tip onto the pipette. Press the plunger down to the first stopper. Insert the pipette tip just under the surface of the liquid and smoothly release the plunger up.

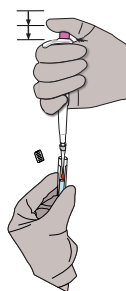
Carefully withdraw the tip from the liquid, touching it against the edge of the container to remove any excess liquid or wipe away any residual sample from outside of the tip.



3. Dispense Sample

Dispense the sample into dilution tube.

Insert the filled tip just under the surface of the liquid in the tube and press the plunger all the way to the second stop.



4. Mix Sharply

Close the cap of dilution tube and turn the tube sharply upside down at least 5 times.

Do not shake the dilution tube.



Measurement

5. Check Cassette Ampoule

Open the pouch containing the Cassette and check the cassette before sample application. If there are small air bubbles, try to remove them by turning the cassette upside down or tapping the ampoule gently. If the liquid in the ampoule has foamed, do not use the cassette.

After cassette ampoule has been checked, use the cassette.

Scan the QR code and watch an instructional video on how to handle air bubbles and foam in the test cassette.



6. Type Patient ID and Read NFC Card

Select the veterinary patient sample measurement icon on LUCIA Analyzer's display, enter veterinary patient ID and read the NFC card as instructed in the Labmaster LUCIA™ Instructions for Use.

NOTE: the diluted sample has to be dispensed into the cassette during the 1-minute time window after the NFC Card has been read.



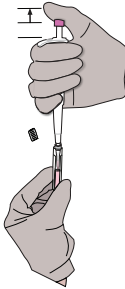
7. Put Cassette onto the Tray

Slide the cassette onto the tray of the analyzer from the right side of the tray.



8. Aspirate Diluted Sample

Place unused pipette tip onto the pipette. Press the plunger down to the first stopper. Insert the pipette tip just under the surface of the liquid and smoothly release the plunger up. Carefully withdraw the tip from the liquid.



11. Remove the Cassette and Check It

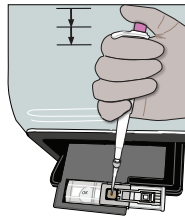
After the measurement is completed, the result will be shown on the analyzer's display, and the door opens and the tray comes out. Remove cassette from the tray.

Check that the silicon chip is not covered by large air bubble or by foil.



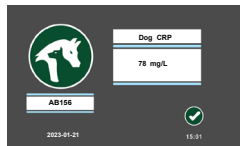
9. Dispense the Sample to the Cassette

Place the pipette tip close to the membrane and press the plunger all the way to the second stop. Keep the plunger down and touch the membrane with the pipette tip. Hold the pipette tip against the membrane until the sample has spread on the entire membrane.



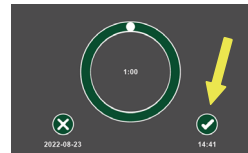
12. Read the Result

Note: If serum/plasma sample was used, multiply the result by factor 0.6.



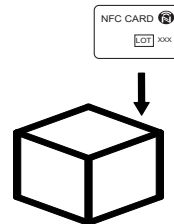
10. Start the Measurement

Immediately after adding the sample, start the measurement by selecting the Accept icon on the display.



13. Return NFC Card to the Test Kit

Place the NFC Card back into the correct kit box.



11. Warnings and Precautions

Health and Safety Information

- For in vitro veterinary diagnostic use only.
- Danger: Washing/measuring buffer in cassette ampoule contains 1.7 mL of 1.9% disodium tetraborate decahydrate, which may damage fertility or the unborn child.



- Liquid reagents contain sodium azide < 0.1%, which is not considered a harmful amount.
- The Labmaster LUCIA™ Vet kit should only be used by a veterinary healthcare professional or adequately trained personnel.
- Wear protective clothing and single use laboratory gloves when handling the veterinary samples or performing the test. Wash hands properly after performing the test.
- Avoid contact of liquids with eyes and skin. If exposed, rinse immediately with plenty of water.
- All veterinary samples and controls should be handled as potentially infectious material.
- Cassette pouch contains a desiccant. This material shall not be used in the assay. Discard the desiccant.
- Disposal: See section 14.

Analytical Precautions

- Do not use kit components after the expiry date printed on the kit label.
- Do not mix components with other kit lots.
- NFC Card is lot specific and should be used only for tests from the same kit lot. If NFC Card is lost, a new card can be requested from support@labmaster.fi.
- Cassettes, Tubes and pipette tips are for single use. Do not use already used cassettes or tubes.
- The Cassette should not be used if the cassette pouch is damaged or broken, if the foil seal in a cassette ampoule has broken and washing/measuring buffer has leaked from ampoule, or if there is crystal formation on the cassette. Please see section 15.
- Check that there are no air bubbles or foam in the cassette ampoule before use. If there are air bubbles, try to remove the bubbles by turning cassette upside down or tapping the ampoule gently. If the liquid in the ampoule has foamed, do not use the cassette.

- Use the Cassette soon after cassette pouch has been opened.
- After the measurements, if there is a large air bubble which covers the whole surface of the silicon chip of the cassette or if the chip is covered by the foil seal, the measurement result is unreliable.
- There is a possibility that other substances and/or factors may interfere with the test and cause erroneous results (e.g. technical or procedural errors).

12. Limitations of the Procedure

Follow the sample collection, dilution and assay procedures specified in these instructions, otherwise the results might not be reliable. Test results should never be used alone for making a diagnosis.

13. Quality Control

Both the Labmaster LUCIA™ Vet Analyzer and LUCIA Kit are factory calibrated. The use of control material is advised to assure the day-to-day validity of results. Use a commercial control or prepare and measure own quality control. Commercial controls should be handled according to the Instructions for Use provided with the controls. The user sets the limit values for the controls. See the Labmaster LUCIA™ Vet Analyzer's Instructions for Use for more detailed measurement instructions.

14. Disposal

All samples and materials shall be disposed of according to local law and regulations. All samples, used cassettes, dilution tubes and pipette tips shall be disposed of as biological, potentially infectious materials. Paper, carton and pouches from LUCIA Kit can be recycled according to local and national instructions. Desiccants and NFC Card can be disposed of in general waste. This product will not cause any health risk if used in accordance with the Instructions for Use.

15. Troubleshooting

For Analyzer-related questions see Labmaster LUCIA™ Vet Analyzer (LM127) Instructions for Use (LM128).

Symptom	Probable Causes	Corrective Action
• Washing/measuring buffer has leaked from ampoule or there is crystal formation on the cassette.	• Foil seal in the cassette ampoule has broken.	• Do not use the cassette. • If the problem reoccurs, contact support@labmaster.fi.
• Washing/measuring buffer inside the cassette has foamed.	• Cassette has been handled heavy-handedly or cassette has been dropped.	• Do not use the cassette. • If the problem reoccurs, contact support@labmaster.fi.
• Sample does not go through membrane.	• Kit has not been stored at the instructed storage temperature or the cassette pouch has broken. • Cassette has been taken out of the pouch too early.	• Do not use the cassette. • If the problem reoccurs, contact support@labmaster.fi.
• Liquid residue on the tray.	• Washing/measuring buffer has leaked from ampoule.	• Blot the liquid into a soft paper or cloth. • If the problem reoccurs, contact support@labmaster.fi.
• Rejected measurement.	• Air bubble or foil seal on top of silicon chip. • Air bubbles or foam in washing/measuring buffer.	• Repeat the measurement using a new cassette. • If the problem reoccurs, contact support@labmaster.fi.
• Grinding sound during tray movement.	• Mechanical malfunction. • Cassette is placed on the tray incorrectly.	• Restart the LUCIA Vet Analyzer. • Repeat the measurement using a new cassette. • If the problem reoccurs, contact support@labmaster.fi.
• Foil seal covers the silicon chip after measurement.	• Defective cassette.	• Measurement result is unreliable, do not use the result. • Repeat the measurement using a new cassette. • If the problem reoccurs, contact support@labmaster.fi.

16. Explanation of Symbols

Symbol	Description
	Manufacturer
	Use by date (YYYY-MM-DD)
	Temperature limit
	Do not reuse
	Consult Instructions for Use
	Catalog number
	Batch code
	Contents sufficient for <n> Tests
	Caution
	Serious health hazard

17. References

- Covin, M. A., & Steiner, J. M. (2022). Measurement and clinical applications of C-reactive protein in gastrointestinal diseases of dogs. *Veterinary Clinical Pathology*, 50, 29-36.
- Yogeshpriya, S., Selvaraj P. (2019). C-reactive protein in Veterinary practice. *Dairy and Vet Sci J.* 019; 13(2): 555858.



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