

C O P Y

No. F. 23/1/10,044  
Division of Genetics, IARI  
New Delhi dt. 12th Dec. 68

Dr. B.M. Lal,  
Biochemist,  
Division of Genetics.

Dr. H. Lehmann,  
Abnormal Human haemoglobin Laboratory,  
Department of Biochemistry,  
University of Cambridge,  
England.

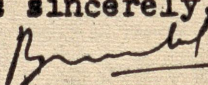
Dear Dr. Lehmann,

We have, in this Division, initiated a programme of research on the characterisation and identification of human abnormal haemoglobin in certain Indian population groups. We are trying to standardise techniques of paper and starch gel electrophoresis, finger printing and amino acid sequence determination for the separation and identification of the abnormal haemoglobins. We feel handicapped for want of reliable samples of abnormal haemoglobins. As your laboratory has been doing very outstanding work in this field, I shall very much appreciate if you could please help us by sending authentic samples of some of the known abnormal haemoglobins which could serve as reference standards. Since the number of known abnormal haemoglobins is very large and we do not know which ones are available with you, we would suggest you to send us as many samples as you can spare which may be both homozygous and heterozygous for the abnormality and involving amino acid changes in  $\alpha$  and  $\beta$  chains or  $\gamma$  or  $\delta$  chains.

Also please send us some of the reprints of your recent publications.

With regards and best wishes for a happy New Year.

Yours sincerely,



(B. M. Lal)

C O P Y

HL/PIB.

24th December, 1968.

Dr. B.M. Lal,  
Biochemist,  
Division of Genetics,  
IARI, New Delhi-12,  
India.

Dear Dr. Lal,

Thank you for your letter of 12th December. I think it would be much easier for you if you were to write to Mr. P.K. Sukumaran, Tata Memorial Hospital, Parel, Bombay 12, India, because he would probably be able to help you with the basic abnormal haemoglobins. As it is, you should not try too many haemoglobins at one time, but once you get your technique for say Haemoglobin S properly standardised and the fingerprinting satisfactory, you can tackle any other haemoglobin. I am sending a copy of your letter and a copy of this letter to Mr. Sukumaran. Meanwhile to keep you going, I am sending you by separate airmail post one solution each of Hb A + S and Hb A + C.

Yours sincerely,

H. Lehmann.

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F 29/10796  
Division of Genetics, IARI  
New Delhi dated the 16<sup>th</sup> Jan. 69

Dr. B. M. Lal,  
Biochemist.

Dear Shri Sukumaran,

This has a reference to a letter which I had written to Prof. H. Lehmann of the Biochemistry Department, Cambridge University for getting some samples of abnormal haemoglobin, for ~~our~~ work, from him. I understand from Prof. Lehmann that he has forwarded a copy of our letter to you. I hope you are in due receipt of it. Further he has suggested us to get in touch with you in this regard.

We have a research programme for standardizing the methods for detection and detailed investigation of abnormal haemoglobin with a view to carry out detailed investigation on the types of abnormal haemoglobins found in certain closely inbred communities of India and to determine the frequency and mode of inheritance of these abnormalities. We need some authentic samples of abnormal haemoglobins for initial standardization work. I shall, therefore, very much appreciate if you could send us as many samples of abnormal haemoglobins as you can conveniently spare. I would also appreciate receiving from you some of your reprints available on the subject and would like to visit your laboratory whenever it is convenient to you.

With kind regards,

Shri P. K. Sukumaran,  
Tata Memorial Hospital,  
Panel, Bombay - 12

Yours sincerely,  
*B. M. Lal*  
(B. M. Lal)

*LMS*  
18.1.69

ED/769 /69

February 3rd, 1969

14 FEB 1969

Dear Dr. Lal:

Thank you for your letter No. F-29/10796 dated January 16th, 1969.

I have received from Prof. Lehmann, copies of your letter No. F-23/1/10,044 dated December 12th, 1968 and his reply to you dated December 24th, 1968. I am glad to note that you intend undertaking detailed investigations and characterizations including amino acid sequence determinations of abnormal haemoglobins found in this country. This is a long-felt necessity and I wish you well in your endeavour.

Although we have seen quite a few abnormal haemoglobins, we do not have good stock of the many specimens we had investigated. This is partly because of the poor storage properties of the specimens. At best, we keep 0.5 to 1 ml. of some of the samples for our reference work. If you can let us know the minimum quantity of haemoglobin sample you need, we shall send you depending on their availability. We try, as far as possible, to keep a track of those patients carrying the abnormal haemoglobins, and collect small quantities as and when required. So you can well imagine that the availability of such samples depend entirely on their response and cooperation.

Perhaps you have now Hb-A + S and Hb-A + C received from Prof. Lehmann to carry on with your standardization. It will be to our mutual advantage that we keep in touch with each other when once you feel you are well set in the work.

I am sending you herewith a list of publications from our Division, which, though not up-to-date, may be useful to you. Most of the reprints of our older publications are out of stock. I am sending you under separate cover a few that are still available.

With best wishes,

Yours sincerely,

*P.K.S.*  
P. K. Sukumaran  
Scientific Officer.

Dr. B. M. Lal,  
Biochemist,  
Division of Genetics,  
IARI, New Delhi - 12.

*lms*  
4.11.69

LIST OF PUBLICATION

1. Naik, S.N., Sukumaran, P.K., and Sanghvi, L.D. : A note on blood groups and haemoglobin variants in Zebu cattle. *Animal Production*; 7:275, 1965.
2. Sukumaran, P.K. : Studies on the haemoglobin A and B of Indian cattle. *Biochim. Biophys. Acta.*, 100:616, 1965.
3. Sukumaran, P.K., and Pk, C. : Some observations on Haemoglobin L Bombay. *Biochim. Biophys. Acta.*, 104:290, 1965.
4. Naik, S.N., and Sukumaran, P.K. : Haemoglobin variants Polymorphism in Indian Water Buffaloes. 10th European Animal Blood Group Conference, Paris, 1966.
5. Sukumaran, P.K., Master, H.R., Undevia, J.V., Balakrishnan, V., and Sanghvi, L.D. : ABO Blood Groups in Active Cases of small-pox. *Ind.J.Med.Sci.*, 20:119-122, 1966.
6. Sukumaran, P.K. : Thalassemia in Western India. Paper presented at the IVth Congress Asian and Pacific of Haematology held at New Delhi, November, 1967.
7. N. Nagaratnam, and Sukumaran, P.K. : Thalassemia in Ceylon. *Acta. Haemat.*, 38:209-218.
8. Nagaratnam, N., and Sukumaran, P.K. : Megaloblastic Anaemia complicating Thalassemia. (In Press).