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## **In search of biomarkers for leprosy diagnosis : in silico identification, screening & field application**

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## Curriculum Vitae

Kidist Bobosha Aboma was born in Addis Ababa, Ethiopia on October 12, 1972. She got her BSc. degree in Biology in July 1992 and her MSc. degree in Applied Microbiology in July 2003 from Addis Ababa University. She worked for Awassa Agricultural Research Center as a researcher in the plant pathology field from 1994 to 2000. Later after she got her MSc, in September 2003, she joined the Armauer Hansen Research Institute and started working on infectious diseases research, mainly in leprosy and tuberculosis. In 2009, she got a PhD opportunity at Leiden University Medical Center (LUMC) in the Department of Infectious Diseases to work on a project proposed to develop novel tools for early detection of *M.leprae* infection under close supervision of her promotors: Prof. dr. A. Geluk and Prof. dr. T.H.M. Ottenhoff. Since January 2013, she returned to her regular research at her home institute, AHRI, and is engaged in leprosy- and other research projects, supports MSc and PhD students and is also actively involved in various administrative responsibilities.



## List of Publications

1. Abeje T, Negera E, Kebede E, Hailu T, Hassen I, Lema T, Yamuah L, Shiguti B, Fenta M, Negasa M, Beyene D, **Bobosha K**, Aseffa A. Performance of general health workers in leprosy control activities at public health facilities in Amhara and Oromia States, Ethiopia. *BMC Health Serv Res.* 2016 Apr 7;16(1):122.
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3. Bekele Y, Amu S, **Bobosha K**, Lantto R, Nilsson A, Endale B, Gebre M, Aseffa A, Rethi B, Howe R, Chiodi F. Impaired Phenotype and Function of T Follicular Helper Cells in HIV-1-Infected Children Receiving ART. *Medicine (Baltimore).* 2015 Jul;94(27):e1125.
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5. **Bobosha K**, Wilson L, van Meijgaarden KE, Bekele Y, Zewdie M, van der Ploeg-van Schip JJ, Abebe M, Hussein J, Khadge S, Neupane KD, Hagge DA, Jordanova ES, Aseffa A, Ottenhoff TH, Geluk A. T-cell regulation in lepromatous leprosy. *PLoS Negl Trop Dis.* 2014 Apr 10;8(4):e2773. doi: 10.1371/journal.pntd.0002773.
6. Geluk A, van Meijgaarden KE, Wilson L, **Bobosha K**, van der Ploeg-van Schip JJ, van den Eeden SJ, Quinten E, Dijkman K, Franken KL, Haisma EM, Haks MC, van Hees CL, Ottenhoff TH. (2014). Longitudinal immune responses and gene expression profiles in type 1 leprosy reactions. *J Clin Immunol* Feb;34(2):245-55.
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8. Wassie L, Abebe M, Aseffa A, **Bobosha K**, Zewdie M, Chanyalew M, Yamuah LK, Cortés A, González JR, Delgado JM, Ceyhan I, Rosenkrands I, Weldingh K, Andersen P, Doherty TM. . (2013). Development of a proof of concept immunochromatographic lateral flow assay for point of care diagnosis of *Mycobacterium tuberculosis*. *BMC Res Notes.*
9. Mihret A, Bekele Y, **Bobosha K**, Kidd M, Aseffa A, Howe R, Walzl G. (2013). Plasma cytokines and chemokines differentiate between active disease and non-active

- tuberculosis infection. *J Infect* 66(4):357-65
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  12. **Bobosha K**, Van Der Ploeg-Van Schip JJ, Zewdie M, Sapkota BR, Hagge DA, Franken KL, Inbiale W, Aseffa A, Ottenhoff TH, Geluk A. Immunogenicity of *Mycobacterium leprae* unique antigens in leprosy endemic populations in Asia and Africa. *Lepr Rev*. 2011 Dec;82(4):445-58.
  13. Ibrahim M, Engidawork E, Yimer G, **Bobosha K**; Aseffa A (2013). Pharmacokinetics of Isoniazid in Ethiopian Children with Tuberculosis in Relation to the N-acetyltransferase 2 (*NAT2*) Genotype. *African Journal of Pharmacy and Pharmacology* vol. 7(18) pp.1124-1130
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  16. Geluk A, Spencer JS, **Bobosha K et al.** (2009). From genome-based in silico predictionsto ex vivo verification of leprosy diagnosis. *Clin.Vaccine Immunol*. 2009; 16:352-9.



## List of Abbreviations

AFB	acid fast bacilli
ART	anti retroviral treatment
BB	borderline borderline leprosy
BI	bacterial Index
BL	borderline lepromatous leprosy
BT	borderline tuberculoid leprosy
CMI	cell mediated immunity
DALY	disability adjusted life years
DAWLY	disability adjusted working life years
DC	dendritic cell
EC <sub>high</sub>	endemic controls living in relatively high leprosy endemic area
EC <sub>low</sub>	endemic controls living in relatively low leprosy endemic area
ELISA	enzyme linked immunosorbent assay
ENL/T2R	erythema nodosum leprosum/Type 2 reaction
GCF	growth colony factor
GNLY	granulysin
GZMA	granzyme A
GZMB	granzyme B
HAART	highly active antiretroviral treatment
HIV	human immune deficiency virus
IFN- $\gamma$	interferon gamma
IL	interleukin
IP-10	interferon gamma induced protein 10
IRD	immune reconstitution syndrome
KAP	knowledge Attitude Practice
LL	lepromatous leprosy
<i>M. leprae</i>	<i>Mycobacterium leprae</i>
MB	multi bacillary
MDT	multi-drug therapy
MF1 (M $\phi$ 1)	pro-inflammatory macrophages
MF2 (M $\phi$ 2)	anti-inflammatory macrophages
MHC	major histocompatibility complex
MLPA	multiple ligation probe amplification
Mtb	<i>Mycobacterium tuberculosis</i>
ND-O-HSA	natural disaccharide octyl human serum albumin
NOD2	nucleotide-binding oligomerization domain
PAMP	pathogen associated molecular patterns
PB	pauci bacillary
PGL-I	phenolic glycolipid-I
POC	point of care
PRR	pathogen recognition receptor
RR/T1R	reversal reaction/Type 1 reaction
SC	schwann cell
SNP	single nucleotide polymorphism
SSS	skin slit smear
TB	tuberculosis
Th	T helper cell

TLR	toll like receptor
TT	tuberculoid leprosy
UCP	up-converting phosphor technology
LF	lateral flow
VDR	vitamin D receptor
WHO	world health organization







