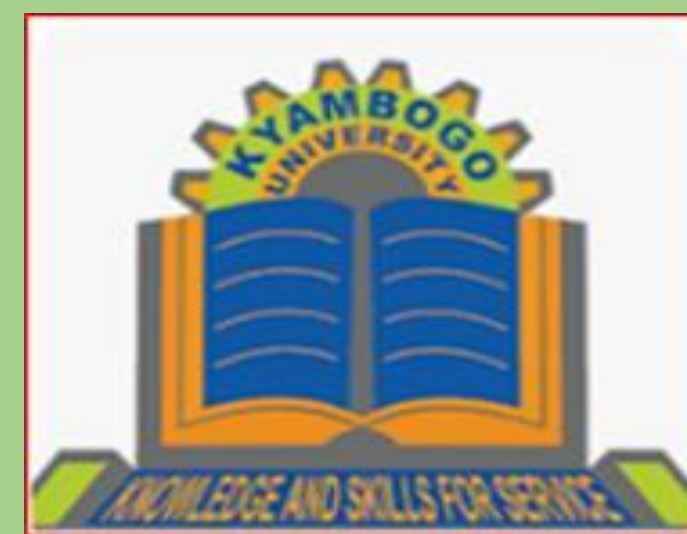




Isolated Compounds from *Kigelia africana* Stem Bark Extract against *Mycobacterium tuberculosis*: Insights into *In-silico* studies

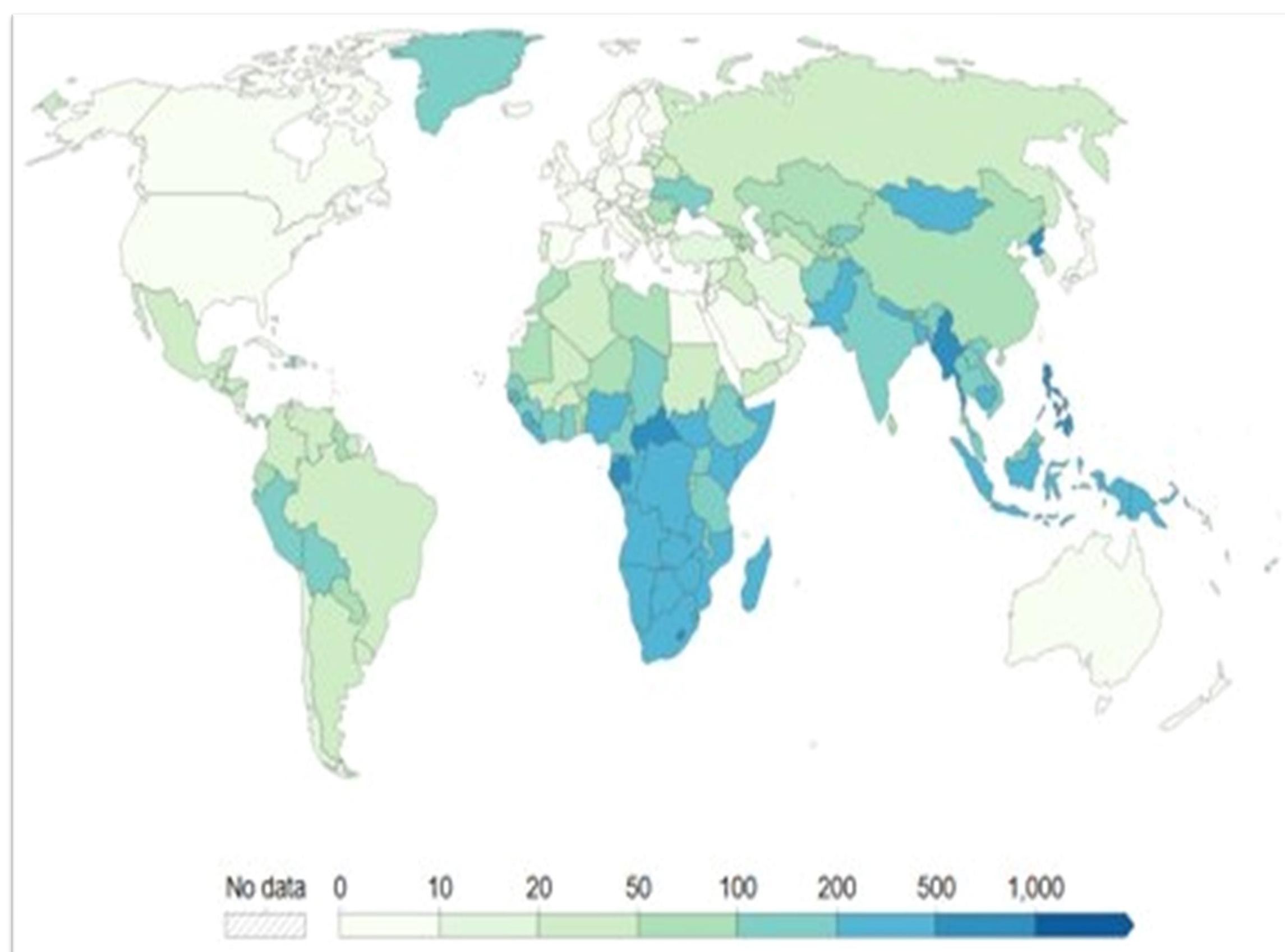
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Introduction

Epidemiology of *Mycobacterium tuberculosis*



Data source: WHO (2024); Population based on various sources

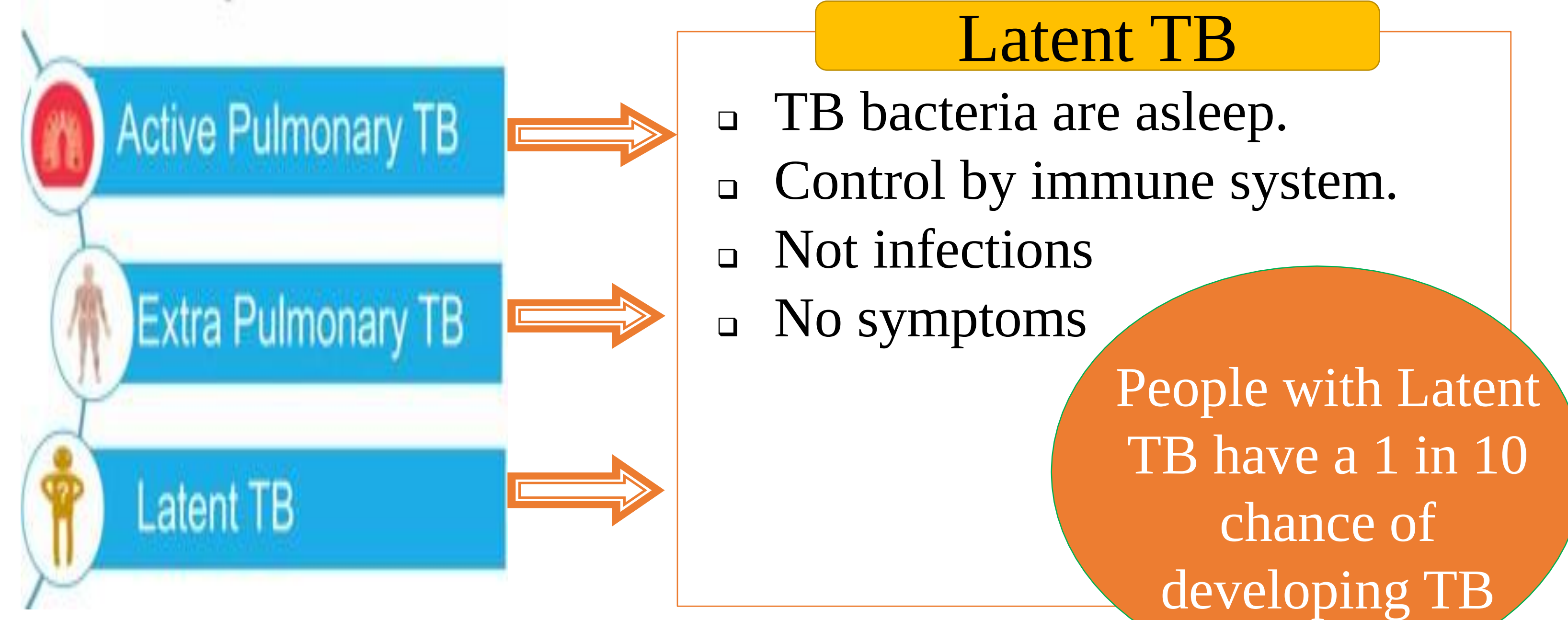
□ Estimated rate of new tuberculosis cases per 100,000 people

Aims

In this present study, we aimed to;

1. Isolate, characterize and elucidate the structures
2. Carryout *In-silico* analyses to investigate the potential anti- mycobacterial activity of known compounds isolated from *K. africana* stem bark against key *M. tuberculosis*, *Escherichia coli* (*E. coli*) and *Staphylococcus aureus* (*S. aureus*) targets.

Latent TB



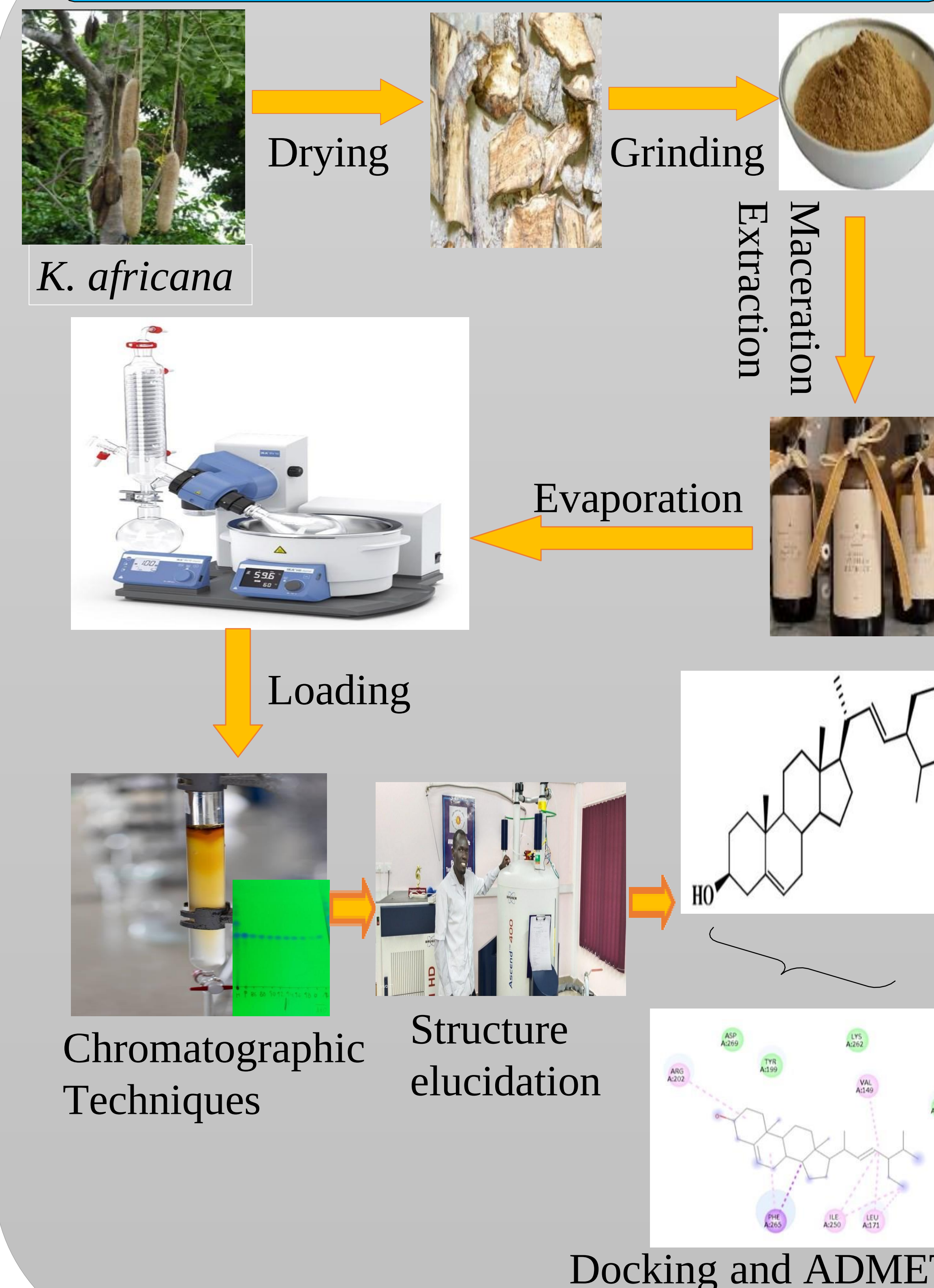
Plant description and Ethnopharmacological properties

Kigelia africana (Lam.) Benth. (the so called “sausage tree”), is a member of Bignoniaceae family and the sole species in its genus.



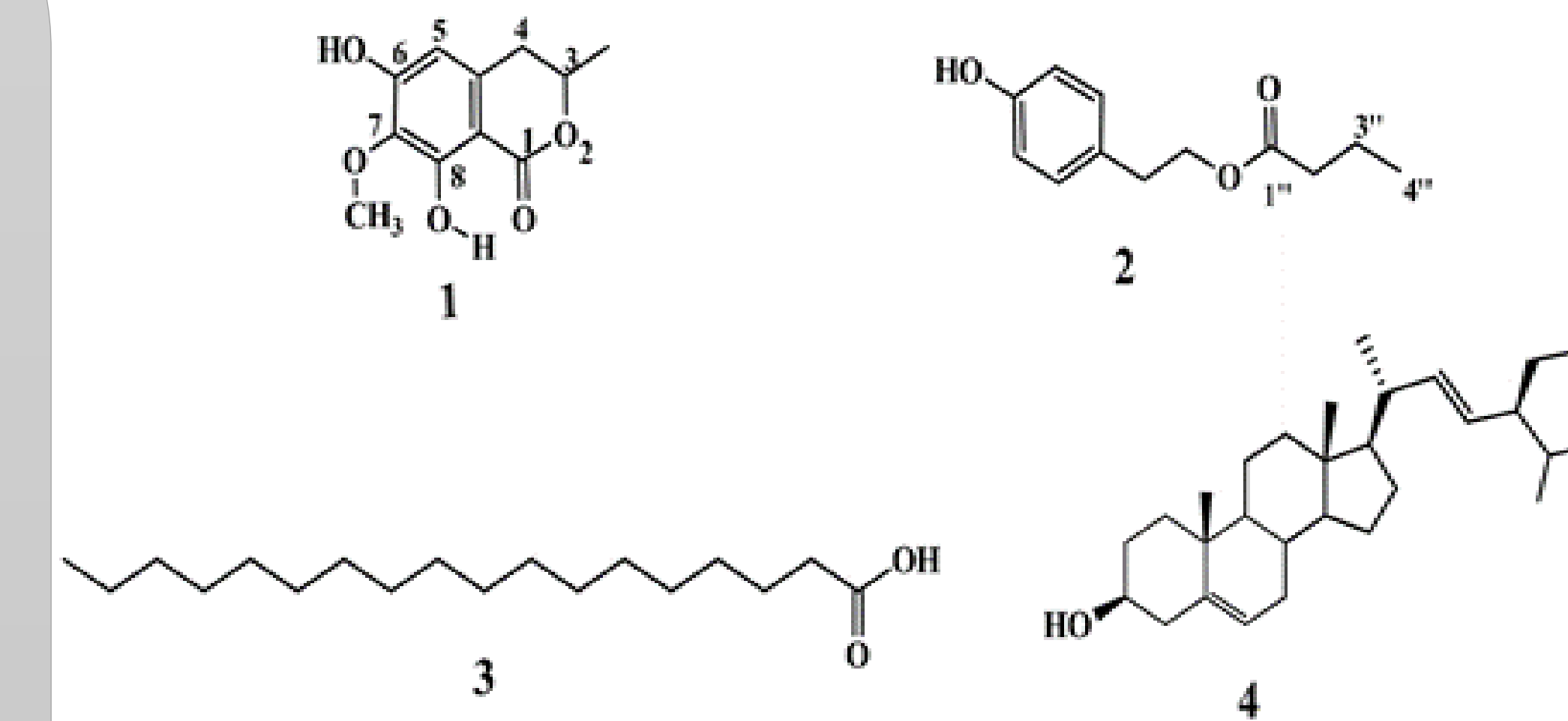
In comparison to synthetic drugs, there is need to find novel or repositioned antimycobacterial agents with unique modes of action and improved safety profiles.

Experimental Approaches



Results and Discussion

1. Structural Elucidation



2. Molecular Docking

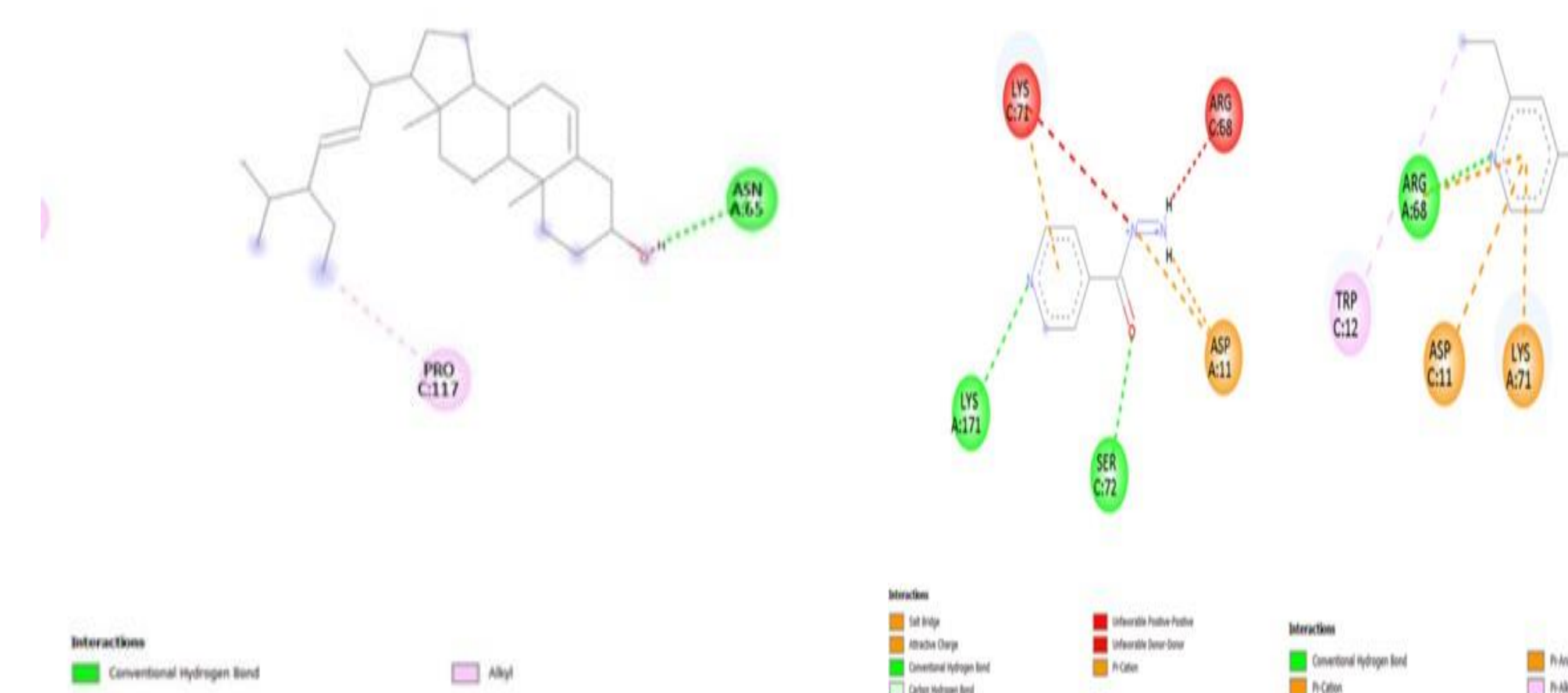


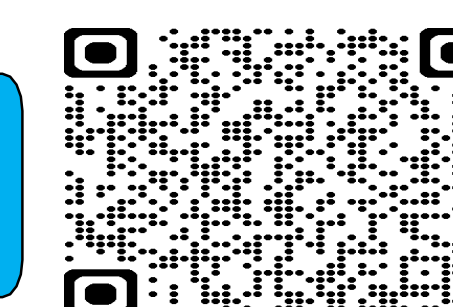
Table 1: Docking Score Results of *M. tuberculosis*, *E. coli* and *S. aureus* Receptors with Potential Inhibitors.

Ligand	Binding affinity (kcal/mol)				
	<i>M. tuberculosis</i>		<i>E. coli</i>		<i>S. aureus</i>
	4QIJ	5HKF	5L3J	8GZY	2QIL
L1	-6.4	-5.9	-6.7	-6.7	-6.8
L2	-5.3	-4.4	-6.0	-5.2	-5.9
L3	-5.3	-3.6	-4.8	-5.2	-5.5
L4	-8.5	-7.2	-7.8	-8.0	-9.3
Isoniazid	-5.6	-5.0	-5.2	-5.1	-5.4
Ethionamide	-4.8	-4.4	-5.7	-5.5	-5.1

Conclusion and Future work

We recommend that future studies should perform *in vitro* and *in vivo* validation of the bioactivity and toxicity.

References



Acknowledgements

