Similarities, variations, and evolution of cytochrome P450s in *Streptomyces* versus *Mycobacterium*

Louisa Moshoeshoe Senate^{1@}, Martin Phalane Tjatji^{1@}, Kayla Pillay^{2@}, Wanping Chen^{3@}, Ntokozo Minenhle Zondo², Puleng Rosinah Syed⁴, Fanele Cabangile Mnguni², Zinhle Edith Chiliza², Hans Denis Bamal¹, Rajshekhar Karpoormath⁴, Thandeka Khoza⁵, Samson Sitheni Mashele¹, Jonathan Michael Blackburn⁶, Jae-Hyuk Yu^{7,8}, David R Nelson^{9*}, Khajamohiddin Syed^{2*}

- @ Authors contributed equally to the work
- * Corresponding authors' email:

drnelson1@gmail.com & khajamohiddinsyed@gmail.com

¹ Unit for Drug Discovery Research, Department of Health Sciences, Faculty of Health and Environmental Sciences, Central University of Technology, Bloemfontein 9300, Free State, South Africa

² Department of Biochemistry and Microbiology, Faculty of Science and Agriculture, University of Zululand, KwaDlangezwa 3886, KwaZulu-Natal, South Africa

³ College of Food Science and Technology, Huazhong Agricultural University, Wuhan, Hubei Province, China

⁴ Department of Pharmaceutical Chemistry, College of Health Sciences, University of KwaZulu-Natal, Durban 4000, KwaZulu-Natal, South Africa

⁵ Department of Biochemistry, School of Life Sciences, University of KwaZulu-Natal (Pietermaritzburg campus), Scottsville, 3209, KwaZulu-Natal, South Africa

⁶ Institute of Infectious Disease & Molecular Medicine; Department of Integrative Biomedical Sciences, Faculty of Health Sciences, University of Cape Town, Cape Town 7925, South Africa

⁷ Department of Bacteriology, University of Wisconsin-Madison, 3155 MSB, 1550 Linden Drive, Madison WI 53706, USA

⁸ Department of Systems Biotechnology, Konkuk University, Seoul, Republic of Korea.

⁹ Department of Microbiology, Immunology and Biochemistry, University of Tennessee Health Science Center, Memphis, TN 38163, USA

