



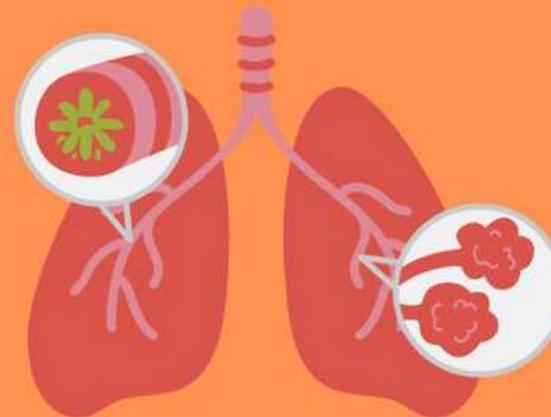
Government of India
Ministry of Science & Technology
Department of Biotechnology

BRIC II
INSTITUTE OF
LIFE SCIENCES

ONE DAY ONE GENOME

Mycobacterium bovis

The strain was found to be
resistant to pyrazinamide - a
hallmark trait of *M. bovis*



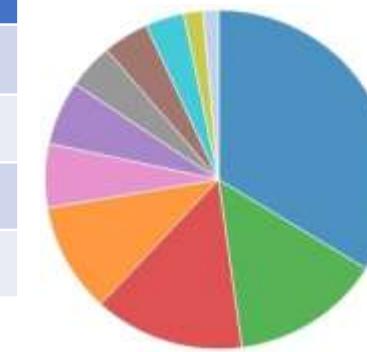
The discovery
emphasizes the urgency
of implementing a One
Health approach to
tackle zoonotic TB

Quality of Genome Assembly and Annotation:Results from indigenously developed **BHARAT** analysis pipeline: (**Bacterial Hybrid genome Assembly and Rapid Annotation Toolset**)**Subsystem Analysis****Table 1: Assembly Details**

Contigs	183
GC Content	65.49
Contig L50	30
Genome length	4,155,294 bp
Contig N50	47,704

Table 2: Annotated Genome Features

CDS	4,175
tRNA	44
Repeat Regions	0
rRNA	3

**Subsystem (Subsystems, Genes)**

METABOLISM	(94, 790)
STRESS RESPONSE, DEFENSE, VIRULENCE	(39, 203)
PROTEIN PROCESSING	(39, 166)
ENERGY	(29, 205)
DNA PROCESSING	(17, 83)
CELLULAR PROCESSES	(17, 158)
CELL ENVELOPE	(12, 78)
MEMBRANE TRANSPORT	(12, 101)
RNA PROCESSING	(10, 36)
MISCELLANEOUS	(5, 45)
REGULATION AND CELL SIGNALING	(4, 15)

Table 3: Antimicrobial Resistance Genes

AMR Mechanism	Genes
Antibiotic target in susceptible species	Alr, Ddl, dxr, EF-G, EF-Tu, EmbA, EmbB, EmbC, folA, Dfr, folP, gyrA, gyrB, inhA, fabI, Iso-tRNA, kasA, MurA, rho, rpoB, rpoC, S10p, S12p
Efflux pump conferring antibiotic resistance	MmpL5, MmpL7, MmpS5, Rv1258c, Rv1634, Rv1747, Rv1877, Rv2333c, Rv2994, Rv3239c
Gene conferring resistance via absence	gidB
Antibiotic inactivation enzyme	AAC(2')-I
Protein altering cell wall charge conferring antibiotic resistance	GdpD, PgsA
Regulator modulating expression of antibiotic resistance genes	ArsR family, EmbR, EthR, LpqB, MarR, MarR family, MtrA, MtrB, WhiB7

Genome Assembly