DNA isolation Kits

- Plant Genomic DNA isolation Kit
- MTB Genomic DNA Isolation Kit

Mycobacterium tuberculosis (MTB) Genomic DNA isolation Kit

PREMAS Biotech has developed a proprietary Mycobacterial Genomic DNA Extraction procedure in a validated working kit form, that provides a simple, convenient and reproducible methodology to isolate high quality genomic DNA from *Mycobacterium* cultures and various clinical samples.

The Genomic DNA Extraction kit combines the plural advantages of simple buffer chemistry and does not use microspin column/maxispin column format or complex resins and eliminates loss of sample DNA. The *Mycobacterium* DNA thus isolated using the PREMAS Biotech Kit, has been found to be of high quality, and is appropriate to be used in sensitive downstream applications such as restriction endonuclease digestion and PCR amplification.

Advantages of PREMAS Biotech Pvt. Ltd. (PBPL) Proprietary *Mycobacterium* Genomic DNA Extraction Kit

- Increased DNA yield & Purity
- Negligible sharing of genomic DNA
- NO use of hazardous reagents Like Guanidium salts, azides, CTAB, etc.
- NO requirement/need of column based Extraction & purification
- Enhanced shelf life of the component reagents.
- DNA extracted is stable for long term at pH 8.0 when stored at -20 degrees C.
- Reproducible results with a) pure culture (MTb), b) sputum, c) blood, d) bronchial washings, e) ascitic fluid f) urine and g) dried specimen and h) sputum from non-infected healthy individuals (negative controls)

Comparative analysis:

Parameter	PBPL Kit	Kit 1 (Column based)	Kit 2 No column	Kit 3 (Magnetic bead based)
Yield observed with cultures (1.2ml of 6 week old culture)	6-12 µg	2.4 - 8 µg	500 ng-2 µg	500ng-2 µg
Yield observed with samples (starting with 1-2.5ml sputum)	1.5 µg -4.3 µg	500 ng - 1.5 µg	Not done	Not done
Purity (260/280 ratio)	1.5 - 1.8	1.4 - 1.8	1.2 - 1.7	1.2 - 1.4
Shearing of the isolated DNA	negligible	present	present	Negligible

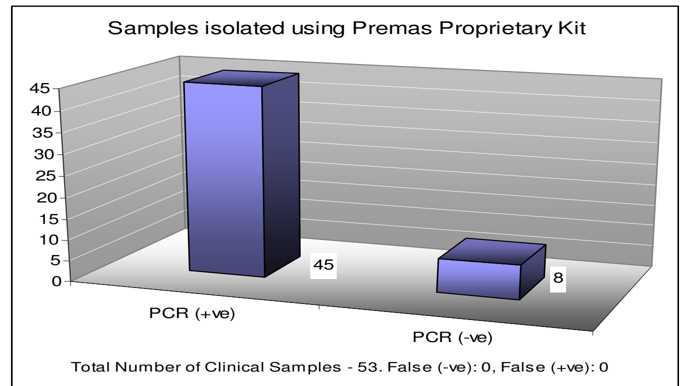

Fig 4
PCR amplification reaction using M tuberculosis culture

Fig 5
Amplification results from the clinical samples isolated by using PBPL kit

Fig4. PCR amplification for IS6110 gene using DNA purified from 6 week old *M tuberculosis* culture in the concentrations:well 1: DNA Ladder; well 2: 100fg Mtb DNA; well 3: 50fg Mtb DNA; well 4: 25fg Mtb DNA; well 5: 10fg Mtb DNA; well 6: 5fg Mtb DNA; well 7: 1fg Mtb DNA

Fig 5. Clinical Samples: Patient Samples – 45, Normal samples – 8, Total Samples – 53, False (-ve) – 0, False (+ve) – 0.

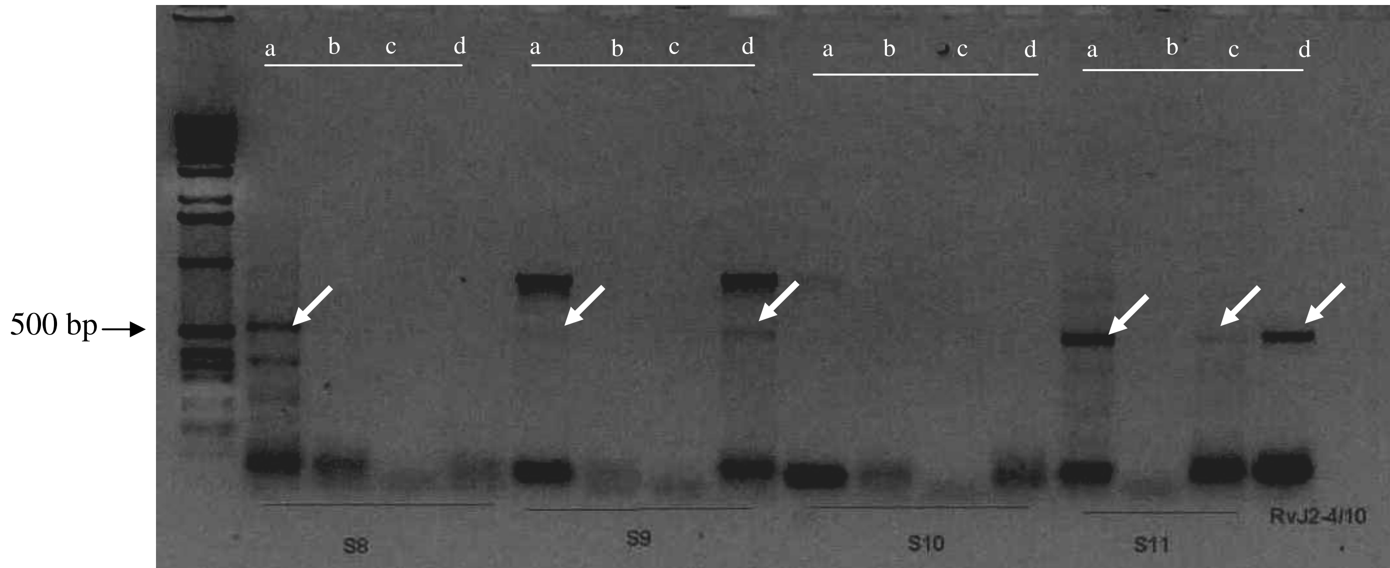

Fig 6
PCR amplification reaction using sputum samples of variable volume and bacillary load; each sample was divided into 4 equal parts and isolated using 4 different isolation methods: method a: PBPL kit; method b: from literature, method c: from literature; method d: A column based commercial (S8= sputum Sample no. 8, S9= Sputum sample no. 9, S10= Sputum sample no. 10, S11=Sputum sample no.11 as per our internal lab nomenclature, RvJ 2-4/10 = DNA from Pure culture of *M. tuberculosis*). Arrows indicate the expected and observed band after PCR amplification for IS6110 gene using standard primers from literature.

- **Intellectual Property Rights: Patents have been filed by PREMAS Biotech Pvt Ltd, India.**
- **Contact for bulk quantity**

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- **Premas Biotech is actively looking for an out licensing partner.**