



**Biotech Consortium India Limited**

## DETECTION OF *Toxoplasma gondii* INFECTION

### TECHNOLOGY AVAILABLE FOR TRANSFER

- *Toxoplasma gondii* is an obligate intracellular protozoan parasite that causes the disease toxoplasmosis. *T. gondii* is one of the most widespread (worldwide distribution) zoonotic pathogens.
- *T. gondii* is identified as an important cause of reproductive failures in ruminants (primarily sheep and goats), leading to substantial economic losses in livestock production.
- *T. gondii* is estimated to infect one-third of the world's human population. In humans, it causes ocular toxoplasmosis in immunocompetent individuals and fatal encephalitis in the immunocompromised and congenital disabilities following vertical transmission to developing fetuses.
- Serological assays (particularly ELISA based on native parasite lysate) for detecting anti-*T. gondii* antibodies are specific and preferred to exhibit good agreement for diagnosis. However, these assays require specific instrumentation in lab set-up, trained personnel, and associated high costs.

### OPPORTUNITY

- The global toxoplasmosis testing market was worth USD 1.7 billion in 2018.
- Expected to grow at a CAGR of 7% from 2019-2028
- Apart from mandatory screening in pregnancy and risk group individuals (veterinary personnel & abattoir workers), there is an increasing number of patients with HIV/AIDS, obesity, diabetes, and aged population having weakened immunity are expected to drive the demand for developing easy to use and cost-effective diagnostic tests.

### TECHNOLOGY

- The technology is rapid lateral flow point-of-care anti-*T. gondii* antibody detection test.
- Gold nanoparticles conjugation with recombinant chimeric protein technology provides a high degree of control over the *Toxoplasma* crude lysate antigens used in the commercial serological kits (ELISA).
- Stable at room temperature for 10-12 days & 25-30 days at 4°C.
- Sensitivity and specificity of the developed Lateral Flow Assay (LFA) is comparable to the commercial ELISA kits.

### UNIQUE SELLING PROPOSITION

- Point-of-Care (PoC) test
- User-friendly and no need for trained laboratory staff
- Low sample volume (Serum & plasma - <20 µl) required
- Low cost (< ₹ 40/test)
- Highly sensitive; detects as low as 20 U/ml (anti-*T. gondii* antibodies)
- Rapid and provides results within 10-15 minutes
- Results examined by the naked eye (no add-on instruments).
- The test can be used for both humans and farm animals

### STAGE OF TECHNOLOGY

- Lab-scale technology
- 3<sup>rd</sup> party validation undertaken through two external organizations and one within the organization

### INTELLECTUAL PROPERTY

- Indian patent application filed in March, 2021

### LICENSING OPPORTUNITY

BCIL is looking for a suitable industrial partner for the development and commercialization of a diagnostic kit for the detection of *T. gondii* infection.

#### CONTACT:

**Dr. Purnima Sharma, Managing Director**

**BIOTECH CONSORTIUM INDIA LIMITED**

V Floor, Anuvrat Bhawan, 210, Deen Dayal Upadhyaya Marg,

New Delhi:110002 Phone: +91-11-2321 9064-67

Fax: +91-11-23219063

Email: [tto.bcil@biotech.co.in](mailto:tto.bcil@biotech.co.in) & [info.bcil@biotech.co.in](mailto:info.bcil@biotech.co.in)

Website: [www.biotech.co.in](http://www.biotech.co.in)