



December 2016

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GFP-labeled *Leishmania* for Drug Discovery and Development

Leishmaniasis is a vector-borne disease that is transmitted by the bite of infected phlebotomine sandflies. This disease is caused by over 20 different *Leishmania* species, and is estimated to globally affect 1.3 million individuals

annually, resulting in 30,000 deaths¹. Currently, chemotherapeutic treatment of leishmaniasis is considerably toxic and largely dependent on disease manifestation, protozoan species, and concomitant infection¹. Further, differences between *Leishmania* species and strains can contribute to variations in drug susceptibility, making treatment and the development of novel therapeutics challenging².

To aid in the development of novel treatments, ATCC recently acquired four transgenic *Leishmania* species that constitutively express GFP. These strains were developed by Patel *et al.* via integration of the pRib1.2αNEOαGFP construct downstream of the 18S rRNA promoter. Each strain was then evaluated by the group for growth and the ability to infect host cells².

ATCC® No.	Species	Designation	Isolation
PRA-416™	<i>Leishmania mexicana</i>	MNYC/BZ/62/M379 GFP	Transfected with GFP. Originally isolated from a Sumichrast's vesper rat, Cayo District, Belize, 1962.
PRA-417™	<i>Leishmania aethiopica</i>	MHOM/ET/72/L100 GFP	Transfected with GFP. Originally isolated from a human, Ethiopia, 1972.
PRA-418™	<i>Leishmania tropica</i>	MHOM/SU/58/OD GFP	Transfected with GFP. Originally isolated from a human, Turkestan, former Soviet Union, 1958.
PRA-419™	<i>Leishmania</i>	MHOM/SU/73/5ASKH GFP	Transfected with GFP. Originally isolated from a human, Askhabad,

*major*Turkmenskaya, former Soviet Union,
1973.

These transgenic strains represent ready-to-use tools for the *in vitro* evaluation of novel therapeutics, and provide a model for understanding *Leishmania* pathogenesis. [View](#) these strains today, or browse our complete collection of [vector-borne research](#) materials.

References

1. "Leishmaniasis." World Health Organization. World Health Organization, Sept. 2016. Web. 14 Nov. 2016.
2. Patel AP, et al. Development and validation of four *Leishmania* species constitutively expressing GFP protein. A model for drug discovery and disease pathogenesis studies. *Parasitology* 141: 501-510, 2014.



Multidrug-resistant Reference Materials

ATCC offers a wide variety of multidrug-resistant strains, microbial panels, and associated cell lines to support the development, verification, and evaluation methods of:

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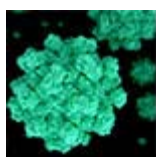


Pharmaceutical Quality Control

Microbial contamination of parenteral, oral, and topical products is a major concern in the pharmaceutical industry. To help protect the quality and safety of pharmaceutical products, ATCC offers a variety of reference materials that can be used in routine sterility tests and quality control procedures.

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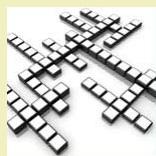
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Quiz the Scientist

I am a contagious enteric pathogen that is spread via contaminated food or water. I was recently cultured for the first time *in vitro*. Can you guess what I am?

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- [Resources for Vector-borne Disease](#)



Frequently Asked Questions

Q: Is the ATCC Medium #431 suggested for *Trypanosoma* suitable for culturing procyclic forms and mammal-infective forms?

A: The various media, including ATCC Medium #431, listed on the ATCC website for cultivation of the different strains of *Trypanosoma* are all suitable for cultivation of the insect-infective forms (hence the 25°C recommended incubation temperature). ATCC does not culture the blood-dwelling trypomastigote forms...[read more](#).

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