

Supplementary data I

Questionnaire on gastrointestinal parasites in non-human primates of French zoological institutions and their diagnostic modalities

GENERAL INFORMATION

Name of the veterinarian:

Name of the institution:

Postal address of the institution:

E-mail address of the veterinarian:

AGREEMENT TO PARTICIPATE TO THE PROJECT (yes/no):

SPECIES OF NON-HUMAN PRIMATES HOUSED IN YOUR INSTITUTION

WHAT SPECIES OF PRIMATES ARE HOUSED IN YOUR INSTITUTION?

- | | | | |
|---|---|---|--|
| <input type="checkbox"/> <i>Eulemur cinereiceps</i> | <input type="checkbox"/> <i>Tarsius spp.</i> | <input type="checkbox"/> <i>Chlorocebus spp.</i> | <input type="checkbox"/> <i>Symphalangus syndactylus</i> |
| <input type="checkbox"/> <i>Eulemur (macaco) flavifrons</i> | <input type="checkbox"/> <i>Lagothrix spp.</i> | <input type="checkbox"/> <i>Cercopithecus roloway</i> | <input type="checkbox"/> <i>Nomascus leucogenys</i> |
| <input type="checkbox"/> <i>Eulemur coronatus</i> | <input type="checkbox"/> <i>Saimiri sciureus</i> | <input type="checkbox"/> <i>Cercopithecus lhoesti</i> | <input type="checkbox"/> <i>Nomascus siki</i> |
| <input type="checkbox"/> <i>Eulemur mongoz</i> | <input type="checkbox"/> <i>Saimiri boliviensis</i> | <input type="checkbox"/> <i>Cercopithecus hamlyni</i> | <input type="checkbox"/> <i>Nomascus gabriellae</i> |
| <input type="checkbox"/> <i>Eulemur rubriventer</i> | <input type="checkbox"/> <i>Saimiri boliviensis boliviensis</i> | <input type="checkbox"/> <i>Cercopithecus neglectus</i> | <input type="checkbox"/> <i>Nomascus siki</i> |
| <input type="checkbox"/> <i>Eulemur fulvus</i> | <input type="checkbox"/> <i>Saimiri boliviensis peruviansis</i> | <input type="checkbox"/> <i>Cercopithecus diana</i> | <input type="checkbox"/> <i>Nomascus gabriellae</i> |
| <input type="checkbox"/> <i>Eulemus macaco</i> | <input type="checkbox"/> <i>Saguinus bicolor</i> | <input type="checkbox"/> <i>Cercopithecus nictitans</i> | <input type="checkbox"/> <i>Hylobates pileatus</i> |
| <input type="checkbox"/> <i>Lemur catta</i> | <input type="checkbox"/> <i>Saguinus midas</i> | <input type="checkbox"/> <i>Allenopithecus nigriviridis</i> | <input type="checkbox"/> <i>Hylobates lar</i> |
| <input type="checkbox"/> <i>Hapalemur alaotrensis</i> | <input type="checkbox"/> <i>Saguinus midas</i> | <input type="checkbox"/> <i>Macaca tonkeana</i> | <input type="checkbox"/> <i>Hylobates muelleri</i> |
| <input type="checkbox"/> <i>Prolemur simus</i> | <input type="checkbox"/> <i>Saguinus imperator</i> | <input type="checkbox"/> <i>Macaca silenus</i> | <input type="checkbox"/> <i>Gorilla gorilla</i> |
| <input type="checkbox"/> <i>Propithecus coronatus</i> | <input type="checkbox"/> <i>Saguinus oedipus</i> | <input type="checkbox"/> <i>Macaca nemestrina</i> | <input type="checkbox"/> <i>Gorilla beringei</i> |
| <input type="checkbox"/> <i>Varecia variegata subcincta</i> | <input type="checkbox"/> <i>Callimico goeldii</i> | <input type="checkbox"/> <i>Macaca sylvanus</i> | <input type="checkbox"/> <i>Pongo pygmaeus</i> |
| <input type="checkbox"/> <i>Varecia variegata</i> | <input type="checkbox"/> <i>Leontopithecus chrysomelas</i> | <input type="checkbox"/> <i>Papio hamadryas</i> | <input type="checkbox"/> <i>Pongo abelli</i> |
| <input type="checkbox"/> <i>Galago senegalensis</i> | <input type="checkbox"/> <i>Leontopithecus chrysomelas</i> | <input type="checkbox"/> <i>Papio papio</i> | <input type="checkbox"/> <i>Pan troglodytes</i> |
| | <input type="checkbox"/> <i>Leontopithecus rosalia</i> | <input type="checkbox"/> <i>Papio anubis</i> | <input type="checkbox"/> <i>Pan paniscus</i> |
| | <input type="checkbox"/> <i>Callithrix jacchus</i> | <input type="checkbox"/> <i>Theropithecus gelada</i> | <input type="checkbox"/> Other |
| | <input type="checkbox"/> <i>Callithrix geoffroyi</i> | <input type="checkbox"/> <i>Lophocebus aterrimus</i> | |
| | <input type="checkbox"/> <i>Cebuella pygmaea</i> | <input type="checkbox"/> <i>Cercocebus torquatus</i> | |
| | <input type="checkbox"/> <i>Mico argentatus</i> | <input type="checkbox"/> <i>Mandrillus sphinx</i> | |
| | <input type="checkbox"/> <i>Ateles hybridus</i> | <input type="checkbox"/> <i>Colobus spp.</i> | |
| | <input type="checkbox"/> <i>Ateles paniscus</i> | <input type="checkbox"/> <i>Procolobus spp.</i> | |
| | <input type="checkbox"/> <i>Ateles fusciceps rufiventris</i> | <input type="checkbox"/> <i>Ptilocolobus spp.</i> | |
| | <input type="checkbox"/> <i>Pithecia pithecia</i> | | |
| | <input type="checkbox"/> <i>Chiropotes satanas</i> | | |
| | <input type="checkbox"/> <i>Sapajus xanthosternos</i> | | |
| | <input type="checkbox"/> <i>Cebus apella</i> | | |
| | <input type="checkbox"/> <i>Cebus capucinus</i> | | |
| | <input type="checkbox"/> <i>Alouatta spp.</i> | | |

FECAL SCREENINGS IN NON-HUMAN PRIMATES IN YOUR INSTITUTION

ARE FECAL SCREENING PERFORMED IN YOUR NON-HUMAN PRIMATE SPECIES (yes/no):

IF SO, IN WHAT SPECIES?

- | | | | |
|---|---|---|--|
| <input type="checkbox"/> <i>Eulemur cinereiceps</i> | <input type="checkbox"/> <i>Tarsius spp.</i> | <input type="checkbox"/> <i>Chlorocebus spp.</i> | <input type="checkbox"/> <i>Symphalangus syndactylus</i> |
| <input type="checkbox"/> <i>Eulemur (macaco) flavifrons</i> | <input type="checkbox"/> <i>Lagothrix spp.</i> | <input type="checkbox"/> <i>Cercopithecus roloway</i> | <input type="checkbox"/> <i>Hylobates pileatus</i> |
| <input type="checkbox"/> <i>Eulemur coronatus</i> | <input type="checkbox"/> <i>Saimiri sciureus</i> | <input type="checkbox"/> <i>Cercopithecus lhoesti</i> | <input type="checkbox"/> <i>Nomascus leucogenys</i> |
| <input type="checkbox"/> <i>Eulemur mongoz</i> | <input type="checkbox"/> <i>Saimiri boliviensis</i> | <input type="checkbox"/> <i>Cercopithecus hamlyni</i> | <input type="checkbox"/> <i>Nomascus siki</i> |
| <input type="checkbox"/> <i>Eulemur rubriventer</i> | <input type="checkbox"/> <i>Saimiri boliviensis boliviensis</i> | <input type="checkbox"/> <i>Cercopithecus neglectus</i> | <input type="checkbox"/> <i>Nomascus gabriellae</i> |
| <input type="checkbox"/> <i>Eulemur fulvus</i> | <input type="checkbox"/> <i>Saimiri boliviensis peruviansis</i> | <input type="checkbox"/> <i>Cercopithecus diana</i> | <input type="checkbox"/> <i>Hylobates lar</i> |
| <input type="checkbox"/> <i>Eulemus macaco</i> | <input type="checkbox"/> <i>Saguinus bicolor</i> | <input type="checkbox"/> <i>Cercopithecus nictitans</i> | <input type="checkbox"/> <i>Hylobates muelleri</i> |
| <input type="checkbox"/> <i>Lemur catta</i> | <input type="checkbox"/> <i>Saguinus midas</i> | <input type="checkbox"/> <i>Allenopithecus nigriviridis</i> | <input type="checkbox"/> <i>Gorilla gorilla</i> |
| <input type="checkbox"/> <i>Hapalemur alaotrensis</i> | <input type="checkbox"/> <i>Saguinus midas</i> | <input type="checkbox"/> <i>Macaca tonkeana</i> | |
| <input type="checkbox"/> <i>Prolemur simus</i> | <input type="checkbox"/> <i>Callimico goeldii</i> | <input type="checkbox"/> <i>Macaca silenus</i> | |
| <input type="checkbox"/> <i>Propithecus coronatus</i> | <input type="checkbox"/> <i>Saguinus imperator</i> | <input type="checkbox"/> <i>Macaca nemestrina</i> | |
| <input type="checkbox"/> <i>Varecia variegata subcincta</i> | <input type="checkbox"/> <i>Saguinus oedipus</i> | <input type="checkbox"/> <i>Macaca sylvanus</i> | |
| <input type="checkbox"/> <i>Varecia variegata</i> | | <input type="checkbox"/> <i>Papio hamadryas</i> | |

- Galago senegalensis*
- Leontopithecus chrysomelas*
- Leontopithecus rosalia*
- Callithrix jacchus*
- Callithrix geoffroyi*
- Cebuella pygmaea*
- Mico argentatus*
- Ateles hybridus*
- Ateles paniscus*
- Ateles fusciceps rufiventris*
- Pithecia pithecia*
- Chiropotes satanas*
- Sapajus xanthosternos*
- Cebus apella*
- Cebus capucinus*
- Alouatta spp.*
- Papio papio*
- Papio anubis*
- Theropithecus gelada*
- Lophocebus aterrimus*
- Cercocebus torquatus*
- Mandrillus sphinx*
- Colobus spp.*
- Procolobus spp.*
- Ptilocolobus spp.*
- Gorilla beringei*
- Pongo pygmaeus*
- Pongo abelli*
- Pan troglodytes*
- Pan paniscus*
- Other

METHODOLOGY OF FECAL SCREENINGS

AT WHAT FREQUENCY ARE FECAL SCREENINGS PERFORMED:

UNDER WHAT EPIDEMIOLOGICAL CIRCUMSTANCES ARE THESE SCREENING PERFORMED?

- As routine diagnosis
- In case of digestive clinical signs within the group
- After infection periods
- In case of confirmed parasitosis in the group
- Other:

WHICH ANIMALS ARE SAMPLED FOR THESE SCREENINGS

- Sick individuals
- Healthy individuals

WHAT PROPORTION OF THE ANIMALS ARE SAMPLED DURING THESE SCREENINGS?

WHAT DIAGNOSTIC METHODS ARE USED DURING THESE SCREENINGS?

- Lugol staining
- Merthiolate-Iodine-Formaldehyde staining
- Modified Ziehl-Neelsen staining
- Coproculture
- Direct microscopic examination
- Flotation enrichment
- Sedimentation enrichment method
- Baermann enrichment method
- Kato enrichment method
- Ballenger enrichment method
- Faust enrichment method
- Ritchie enrichment method
- Telemann-Rivas enrichment method
- Willis enrichment method
- Other (please comment):

PARASITIC BACKGROUND OF YOUR INSTITUTION

WHAT IS THE PARASITIC BACKGROUND OF SCREENED SPECIES? (add parasite species diagnosed if possible)

Species	Amoeba	Flagellates	Coccidia	Cestodes	Oxyurids	Strongylids	Other nematodes
<i>Eulemur cinereiceps</i>							
<i>Eulemur (macaco) flavifrons</i>							
<i>Eulemur coronatus</i>							
<i>Eulemur mongoz</i>							
<i>Eulemur rubriventer</i>							
<i>Eulemur fulvus</i>							
<i>Eulemur macaco</i>							
<i>Lemur catta</i>							
<i>Hapalemur alaotrensis</i>							
<i>Prolemur simus</i>							
<i>Propithecus coronatus</i>							
<i>Varecia variegata subcincta</i>							
<i>Varecia variegata</i>							
<i>Galago senegalensis</i>							

<i>Tarsius spp.</i>							
<i>Lagothrix spp.</i>							
<i>Saimiri sciureus</i>							
<i>Saimiri boliviensis boliviensis</i>							
<i>Saimiri boliviensis peruviansis</i>							
<i>Saguinus bicolor</i>							
<i>Saguinus midas</i>							
<i>Saguinus imperatoru</i>							
<i>Saguinus Oedipus</i>							
<i>Callimico goeldii</i>							
<i>Leontopithecus chrysomelas</i>							
<i>Leontopithecus rosalia</i>							
<i>Callithrix jacchus</i>							
<i>Callithrix geoffroyi</i>							
<i>Cebuella pygmaea</i>							
<i>Mico argentatus</i>							
<i>Ateles hydribdus</i>							
<i>Ateles paniscus</i>							
<i>Ateles fusciceps rufiventris</i>							
<i>Pithecia pithecia</i>							
<i>Chiropotes satanas</i>							
<i>Sapajus xanthosternos</i>							
<i>Cebus apella</i>							
<i>Cebus capucinus</i>							
<i>Alouatta spp.</i>							
<i>Chlorocebus spp.</i>							
<i>Cercopithecus roloway</i>							
<i>Cercopithecus lhoesti</i>							
<i>Cercopithecus hamlyni</i>							
<i>Cercopithecus neglectus</i>							
<i>Cercopithecus diana</i>							
<i>Cercopithecus nictitans</i>							
<i>Allenopithecus nigriviridis</i>							
<i>Macaca tonkeana</i>							
<i>Macaca silenus</i>							
<i>Macaca nemestrina</i>							
<i>Macaca sylvanus</i>							
<i>Papio hamadryas</i>							
<i>Papio papio</i>							
<i>Papio anubis</i>							
<i>Theropithecus gelada</i>							
<i>Lophocebus aterrimus</i>							
<i>Cercocebus torquatus</i>							
<i>Mandrillus sphinx</i>							
<i>Colobus spp.</i>							
<i>Procolobus spp.</i>							
<i>Piliocolobus spp.</i>							
<i>Symphalangus syndactylus</i>							
<i>Nomascus leucogenys</i>							
<i>Nomascus siki</i>							
<i>Nomascus gabriellae</i>							
<i>Hylobates pileatus</i>							
<i>Hylobates lar</i>							

<i>Hylobates muelleri</i>							
<i>Gorilla gorilla</i>							
<i>Gorilla beringei</i>							
<i>Pongo pygmaeus</i>							
<i>Pongo abelli</i>							
<i>Pan troglodytes</i>							
<i>Pan paniscus</i>							

PARASITES IN OTHER SPECIES OF YOUR INSTITUTIONS

ARE THOSE PARASITES FOUND IN OTHER NON-PRIMATE SPECIES IN YOUR INSTITUTION (yes/no):

IF SO, IN WHAT SPECIES?

Amoeba (<i>Entamoeba</i> , <i>Endolimax</i> , ...)	
Flagellates (<i>Giardia</i> , <i>Chilomastix</i> , <i>Enteromonas</i> , ...)	
Blastocystis	
Coccidia (<i>Cryptosporidium</i> , ...)	
Cestodes (<i>Bertiella</i> , ...)	
Oxyurids (<i>Enterobius</i> , ...)	
Strongyles (<i>Ancylostoma</i> , <i>Ternidens</i> , <i>Oesophagostomum</i> , <i>Trichostrongylus</i> , ...)	
Other nematodes (<i>Trichuris</i> , <i>Ascaris</i> , <i>Strongyloides</i> , ...)	

DEGREE OF CONFIDENCE

WHO CARRIES OUT FECAL SCREENINGS IN YOUR INSTITUTION

- Zoo veterinarians Veterinary students
 Zookeepers Other:

WHAT IS THE DEGREE OF CONFIDENCE OF DIAGNOSIS (0-100):

IN CASE OF PARASITE IDENTIFICATION OR DOUBTFUL RESULTS, IS THE SAMPLE SCREENED BY A VETERINARIAN FOR SECOND OPINION (yes/no):

PROSPECTIVE FECAL SCREENINGS AT THE VETERINARY COLLEGE OF ALFORT

WHICH OF YOUR NON-HUMAN PRIMATE SPECIES WOULD YOU LIKE TO INCLUDE IN THE PROSPECTIVE STUDY?

<input type="checkbox"/> <i>Eulemur cinereiceps</i>	<input type="checkbox"/> <i>Tarsius spp.</i>	<input type="checkbox"/> <i>Chlorocebus spp.</i>	<input type="checkbox"/> <i>Symphalangus syndactylus</i>
<input type="checkbox"/> <i>Eulemur (macaco) flavifrons</i>	<input type="checkbox"/> <i>Lagothrix spp.</i>	<input type="checkbox"/> <i>Cercopithecus roloway</i>	<input type="checkbox"/> <i>Hylobates pileatus</i>
<input type="checkbox"/> <i>Eulemur coronatus</i>	<input type="checkbox"/> <i>Saimiri sciureus</i>	<input type="checkbox"/> <i>Cercopithecus lhoesti</i>	<input type="checkbox"/> <i>Nomascus leucogenys</i>
<input type="checkbox"/> <i>Eulemur mongoz</i>	<input type="checkbox"/> <i>Saimiri boliviensis boliviensis</i>	<input type="checkbox"/> <i>Cercopithecus hamlyni</i>	<input type="checkbox"/> <i>Nomascus siki</i>
<input type="checkbox"/> <i>Eulemur rubriventer</i>	<input type="checkbox"/> <i>Saimiri boliviensis peruviansis</i>	<input type="checkbox"/> <i>Cercopithecus neglectus</i>	<input type="checkbox"/> <i>Nomascus gabriellae</i>
<input type="checkbox"/> <i>Eulemur fulvus</i>	<input type="checkbox"/> <i>Saguinus bicolor</i>	<input type="checkbox"/> <i>Cercopithecus diana</i>	<input type="checkbox"/> <i>Hylobates lar</i>
<input type="checkbox"/> <i>Eulemus macaco</i>	<input type="checkbox"/> <i>Saguinus midas</i>	<input type="checkbox"/> <i>Cercopithecus nictitans</i>	<input type="checkbox"/> <i>Hylobates muelleri</i>
<input type="checkbox"/> <i>Lemur catta</i>	<input type="checkbox"/> <i>Callimico goeldii</i>	<input type="checkbox"/> <i>Allenopithecus nigriviridis</i>	<input type="checkbox"/> <i>Gorilla gorilla</i>
<input type="checkbox"/> <i>Hapalemur alaotrensis</i>	<input type="checkbox"/> <i>Saguinus imperator</i>	<input type="checkbox"/> <i>Macaca tonkeana</i>	<input type="checkbox"/> <i>Gorilla beringei</i>
<input type="checkbox"/> <i>Prolemur simus</i>	<input type="checkbox"/> <i>Saguinus oedipus</i>	<input type="checkbox"/> <i>Macaca Silenus</i>	<input type="checkbox"/> <i>Pongo pygmaeus</i>
<input type="checkbox"/> <i>Propithecus coronatus</i>	<input type="checkbox"/> <i>Leontopithecus chrysomelas</i>	<input type="checkbox"/> <i>Macaca nemestrina</i>	<input type="checkbox"/> <i>Pongo abelli</i>
<input type="checkbox"/> <i>Varecia variegata subcinta</i>	<input type="checkbox"/> <i>Leontopithecus rosalia</i>	<input type="checkbox"/> <i>Macaca sylvanus</i>	<input type="checkbox"/> <i>Pan troglodytes</i>
<input type="checkbox"/> <i>Varecia variegata</i>	<input type="checkbox"/> <i>Callithrix jacchus</i>	<input type="checkbox"/> <i>Papio hamadryas</i>	<input type="checkbox"/> <i>Pan paniscus</i>
<input type="checkbox"/> <i>Galago senegalensis</i>	<input type="checkbox"/> <i>Callithrix geoffroyi</i>	<input type="checkbox"/> <i>Papio papio</i>	<input type="checkbox"/> Other
	<input type="checkbox"/> <i>Cebuella pygmaea</i>	<input type="checkbox"/> <i>Papio anubis</i>	
	<input type="checkbox"/> <i>Mico argentatus</i>	<input type="checkbox"/> <i>Theropithecus gelada</i>	
	<input type="checkbox"/> <i>Ateles hybridus</i>	<input type="checkbox"/> <i>Lophocebus aterrimus</i>	
	<input type="checkbox"/> <i>Ateles paniscus</i>	<input type="checkbox"/> <i>Cercocebus</i>	
	<input type="checkbox"/> <i>Ateles fusciceps rufiventris</i>		
	<input type="checkbox"/> <i>Pithecia pithecia</i>		
	<input type="checkbox"/> <i>Chiropotes satanas</i>		
	<input type="checkbox"/> <i>Sapajus xanthosternos</i>		
	<input type="checkbox"/> <i>Cebus apella</i>		
	<input type="checkbox"/> <i>Cebus capucinus</i>		
	<input type="checkbox"/> <i>Alouatta spp.</i>		

		<i>torquatus</i> <input type="checkbox"/> <i>Mandrillus sphinx</i> <input type="checkbox"/> <i>Colobus spp.</i> <input type="checkbox"/> <i>Procolobus spp.</i> <input type="checkbox"/> <i>Piliocolobus spp.</i>	
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HOW MANY SAMPLES ARE YOU WILLING TO SEND (ideally one three-day pooled sample/species):
AT WHAT TIME OF THE YEAR COULD YOU SEND THE SAMPLES: