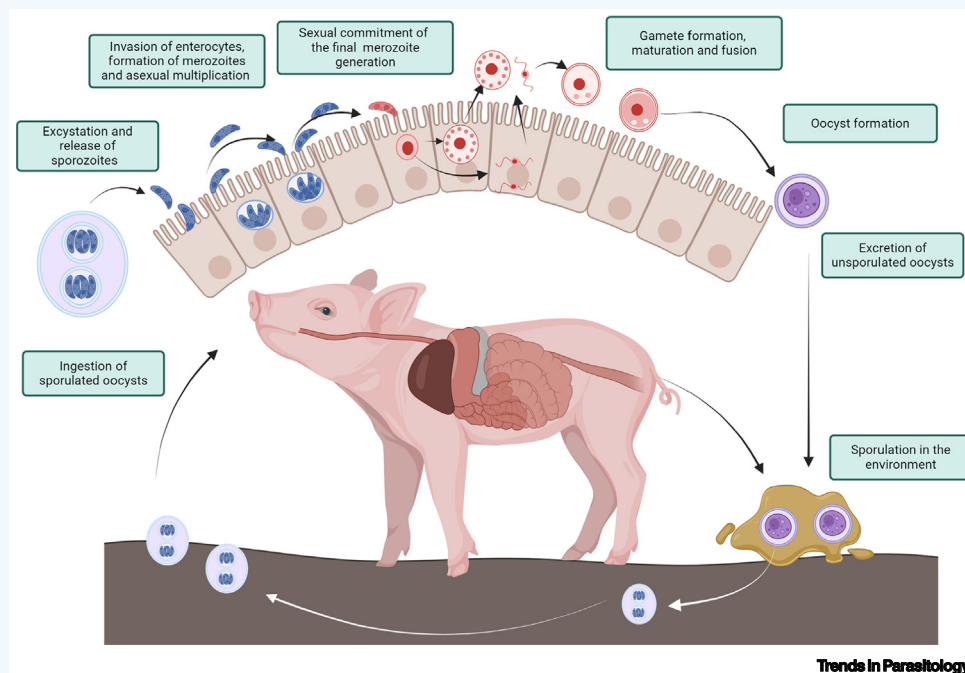


Cystoisospora suis

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Cystoisospora suis, an obligate intracellular protozoan parasite of the order Coccidia, causes porcine cystoisosporosis predominantly in suckling piglets, with significant economic losses in the pig-producing industry worldwide. It has a direct life cycle with sporulated oocysts as transmissible stages and, despite its monoxenic development, is a close relative of *Toxoplasma gondii* and *Neospora caninum*. Unlike any other member of the Coccidia, however, *C. suis* can be cultivated *in vitro* in all developmental phases, allowing for detailed studies on the morphology, development, transcriptomic, and proteomic makeup of asexual, presexual, and, specifically, sexual stages (gametes) which are frequently only poorly accessible in this order due to their short life span and low number. Over the years, *C. suis* has grown into a non-model member of the Coccidia with implications for new ways to control coccidiosis in livestock and man.

KEY FACTS:

C. suis infection results in significant economic losses in the pig-producing industry, due to its high prevalence in pig farms worldwide, which lies between 58% and 82% of infected piglets.

In contrast to other *in vitro* culture systems for Apicomplexan parasites, the advanced *C. suis* *in vitro* system makes the cultivation of sexual stages possible, which to date is unique in Coccidia and other important groups of apicomplexan parasites.

As soon as merozoites have undergone their development and matured to sexually committed forms, sexual stages can be cultured with or without host cells, and oocysts arise from cultures.

DISEASE FACTS:

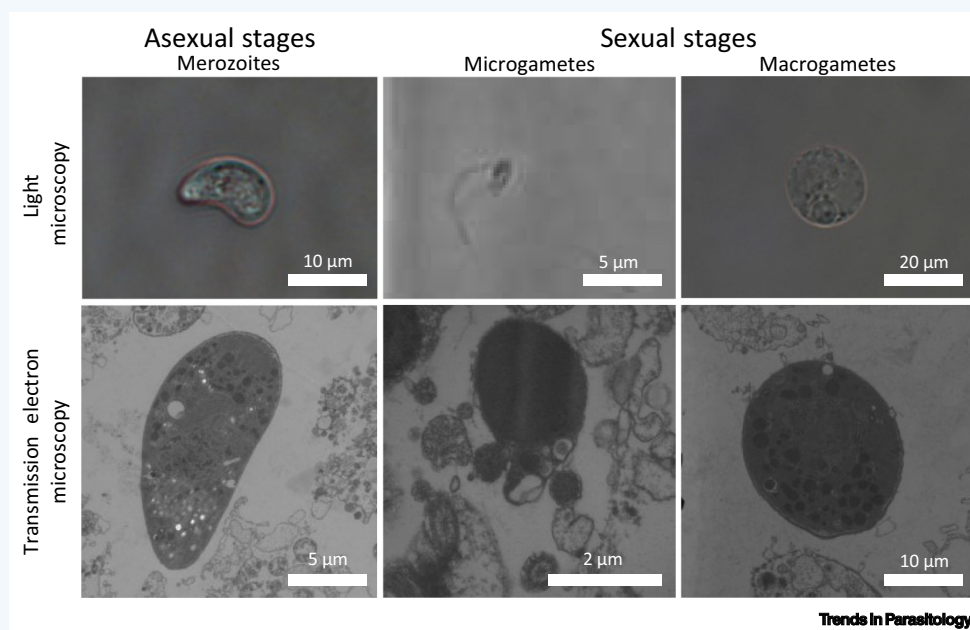
Most common symptoms are non-haemorrhagic diarrhoea and reduced weight gain leading to increased production costs and poor performance in industrialised pig production.

Despite limited treatment options, toltrazuril, the only registered compound in the EU, remains active against *C. suis*. However, resistance to toltrazuril is on the rise.

As of now, no commercially available vaccine is available. However, vaccination targets hold promise for future control options.

TAXONOMY AND CLASSIFICATION:

PHYLUM: Apicomplexa
CLASS: Conoidasida
ORDER: Eucoccidiorida
FAMILY: Sarcocystidae
GENUS: *Cystoisospora*
SPECIES: *C. suis*



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Declaration of interests

The authors declare no competing interests.

Resources

<https://swinehealth.ceva.com/blog/coccidiosis-in-piglets>

www.apicowplexa.net/index.php/bern-2021/

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