COMMISSIE COGEM GENETISCHE MODIFICATIE

Classification of Organisms:

Pathogenicity classification of parasites

Status January 2012 (CGM/120127-01)

Pathogenicity classification of parasites

COGEM advice CGM/120127-01

Dutch Regulations Genetically Modified Organisms

In the Decree on Genetically Modified Organisms (GMO Decree) and its accompanying more detailed Regulations (GMO Regulations) genetically modified micro-organisms are grouped in four pathogenicity classes, ranging from the lowest pathogenicity Class 1 to the highest Class 4.[1] The pathogenicity classifications are used to determine the containment level for working in laboratories with GMOs.

A micro-organism of Class 1 should at least comply with one of the following conditions:

a) the micro-organism does not belong to a species of which representatives are known to be pathogenic for humans, animals or plants,
b) the micro-organism has a long history of safe use under conditions without specific containment measures,
c) the micro-organism belongs to a species that includes representatives of class 2, 3 or 4, but the particular strain does not contain genetic material that is responsible for the virulence,
d) the micro-organism has been shown to be non-virulent through adequate tests.

A micro-organism is grouped in Class 2 when it can cause a disease in humans or animals whereby it is unlikely to spread within the population while an effective prophylaxis, treatment or control strategy exists, as well as an organism that can cause a disease in plants.

A micro-organism is grouped in Class 3 when it can cause a serious disease in humans or animals whereby it is likely to spread within the population while an effective prophylaxis, treatment or control strategy exists.

A micro-organism is grouped in Class 4 when it can cause a very serious disease in humans or animals whereby it is likely to spread within the population while no effective prophylaxis, treatment or control strategy exists.

Pathogenicity classification of parasites

The Netherlands Commission on Genetic Modification (COGEM) advises the Dutch government (amongst others) on the classification in risk groups (classes) of organisms according to the risk they pose to human health and the environment. These classifications are written in Dutch and are therefore only published on the Dutch part of the COGEM website.

In order to inform other countries and/or organisations about the classification of organisms by COGEM, the most recent classification list of parasites has been translated.

In table 1 all parasites that have been classified until the 27th of January 2012 are listed alphabetically.

[1]. Ministerie van Infrastructuur en Milieu (2015). Regeling genetisch gemodificeerde organismen milieubeheer 2013. http://wetten.overheid.nl/BWBR0035072/2017-01-01 [In Dutch]

Table 1. Pathogenicity classification of parasites

Species/genus	Class
Babesia spp.	2
Cooperia spp.	2
C. curticei	2
C. oncophora	2
Cryptosporidium spp.	2
C. parvum	2
Dictyocaulus spp.	2
D. viviparus	2
E. granulosus[#]	3
E. multilocularis[#]	3
Eimeria spp.	2
E. histolytica	2
F. hepatica	2
Giardia spp.	2
H. contortus	2
Ixodes spp.	2
I. ricinus	2
L. infantum[#]	2
L. major[#]	2
L. mexicana[#]	2
L. tarentolae[#]	2
L. tropica[#]	2
Neospora spp.	2
N. caninum	2
Teladorsagia circumcincta[#] (formerly*Ostertagia circumcincta*)	2
O. ostertagi	2
Plasmodium spp.[#] with the exception of	
P. falciparum	2
P. falciparum[#]	3
Rhipicephalus (Boophilus) microplus[#]	2
S. mansoni[#]	2
S. stercoralis[#]	2
Theileria spp.	2
T. annulata	2
Toxocara spp.	2
T. gondii[#]	2
Trichinella spp.	2
T. spiralis	2
Trichostrongylus spp.	2
T. brucei brucei	2