## **RES-306**





# ITS barcoding *Pythium* species causing eye infection

**Authors** 

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#### **Objectives**

To use a PCR and Sanger sequencing method for identification of *Pythium* species isolated from patients with fungal keratitis.

#### Introduction

Pythium spp., especially P. insidiosum is a fungus-like pathogen causing severe diseases of skin, eye, blood vessel, can spread to multiple organs, losing the infected organ or death is always an outcome. Rapid identification of the fungal species is important to decelerate the outcome.

#### Results

Seven strains were *P. insidiosum*, two strains were *P. periculosum*, a rare species for eye infection. ITS analyses could produce barcoding gaps among *Pythium* species and closely related genera. Intraspecific distances of species in *P. insidiosum* complex i.e *P. insidiosum*, *P. periculosum* and *P. aphanidermatum*, were lower than their interspecific distances.

### Conclusion

ITS barcoding would be an appropriate tool for use in routine as another gold standard method for *Pythium* species identification.

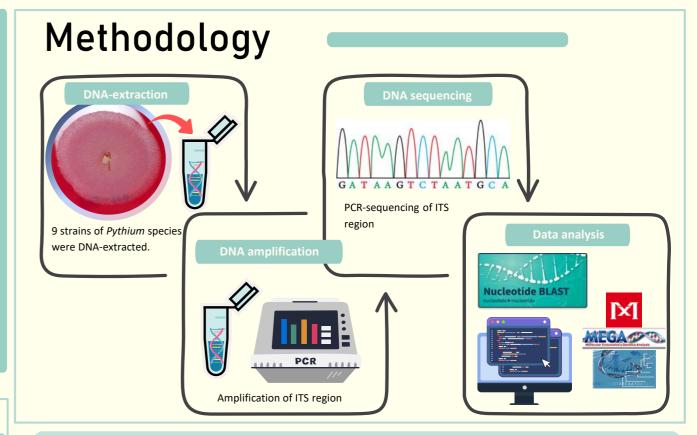


Figure 1: NJ tree of ITS: 9 *Pythium* + other types & references, MUSCLE aligned, T93+G model,  $\geq$  50% 1,000 Bootstrap nodes, T = Type material

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OQ532908 P. periculosum isolate archive ID 1634
   PQ525320 P. periculosum isolate VMT 1484
  OQ532907 P. periculosum isolate archive ID 1633
   PQ525321 P. periculosum isolate VMT 1506
   PQ525322 P. periculosum isolate VMT 1564
  OM307442 P. periculosum isolate mtp 82
   OM307443 P. periculosum isolate mtp 80
   OM307444 P. periculosum isolate mtp 99
   OM307445 P. periculosum isolate mtpc72
   OM367945 Pythium sp. LM 2022a voucher MTP 03
 <sup>99 OM367943</sup> Pythium sp. LM 2022a voucher MTP 01
  KP780448 P. insidiosum strain ATCC 90478
100L MH356546 P. periculosum strain Dog12
 100 | AY151157 Pythium insidiosum isolate 65
   AY598637 Pythium insidiosum strain CBS 547.85 T
  ITS 43
  ITS 109
              ► 97.82-100% similar P. insidiosum
   ITS 68
   ITS 46
   ITS 06
   ITS 09
   PP291974 P. insidiosum isolate KU40021.2
   PP291988 P. insidiosum isolate KU40023.1
   PP291980 P. insidiosum isolate KU40021.8
  MT459314 P. insidiosum strain KU40018.1
100 | AY598692 P. grandisporangium strain CBS 286.79
   AY151182 P. grandisporangium isolate 54
              MZ540618 P. periplocum isolate CP2083
      AB285498 Lagenidium myophilum strain NJM 8601
    OR466326 P. aphanidermatum strain GSS Pa66
    PV764950 P. aphanidermatum strain P1
    MT613658 P. aphanidermatum voucher Tissue
    OR461525 P. aphanidermatum strain GSS Pa14
    LC512457 P. aphanidermatum HSP 2
    AY598622 P. aphanidermatum strain CBS 118.80
      - AY151183 Lagenidium giganteum isolate 36492
      - KX492590 Lagenidium juracyae strain ARSEF 2531
                  AY598695 Globisporangium radiosum strain CBS 217.94
                  NR 147884 Phytophthora boehmeriae CBS 291.29 T
            NR 147856 Phytophthora mirabilis CBS 678.85T
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