

# VETERINARY TECHNICAL DATASHEET

Complement 3 (C3) Deficiency



Mutation Found In :Brittany

## Disorder Type

- Immune system

## Disease Severity

- Moderate/severe

## Background

C3 plays a critical role in the immune system and without functional C3, a dog is much more likely to develop bacterial infections and have kidney problems throughout its life.

## Key Signs

- Recurrent bacterial infections
- Renal disease

## Clinical Description

Deficiency in C3 predisposes an affected puppy to recurrent bacterial infections at an early age and to renal amyloidosis or Type 1 membranoproliferative glomerulonephritis. C3 deficient puppies also have an increased risk of developing hereditary renal and muscular disease (familial juvenile glomerulonephropathy and hereditary canine spinal muscular atrophy).

## Mode of Inheritance

- autosomal recessive

## Gene Name

- C3

## Next Steps

Treatment is supportive care and antibiotics as needed to treat infections that arise. Additionally, an affected dog should be monitored for developing kidney and muscle diseases.

## References

Johnson JP, McLean RH, Cork LC, Winkelstein JA. Genetic analysis of an inherited deficiency of the third component of complement in Brittany spaniel dogs. *Am J Med Genet* 25:557-562, 1986.

Ameratunga R, Winkelstein JA, Brody L, Binns M, Cork LC, Colombani P, Valle D. Molecular analysis of the third component of canine complement (C3) and identification of the mutation responsible for hereditary canine C3 deficiency. *J Immunol* 160:2824-30, 1998.