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Leukocyte protein Trojan, as a candidate for apoptotic regulatory role

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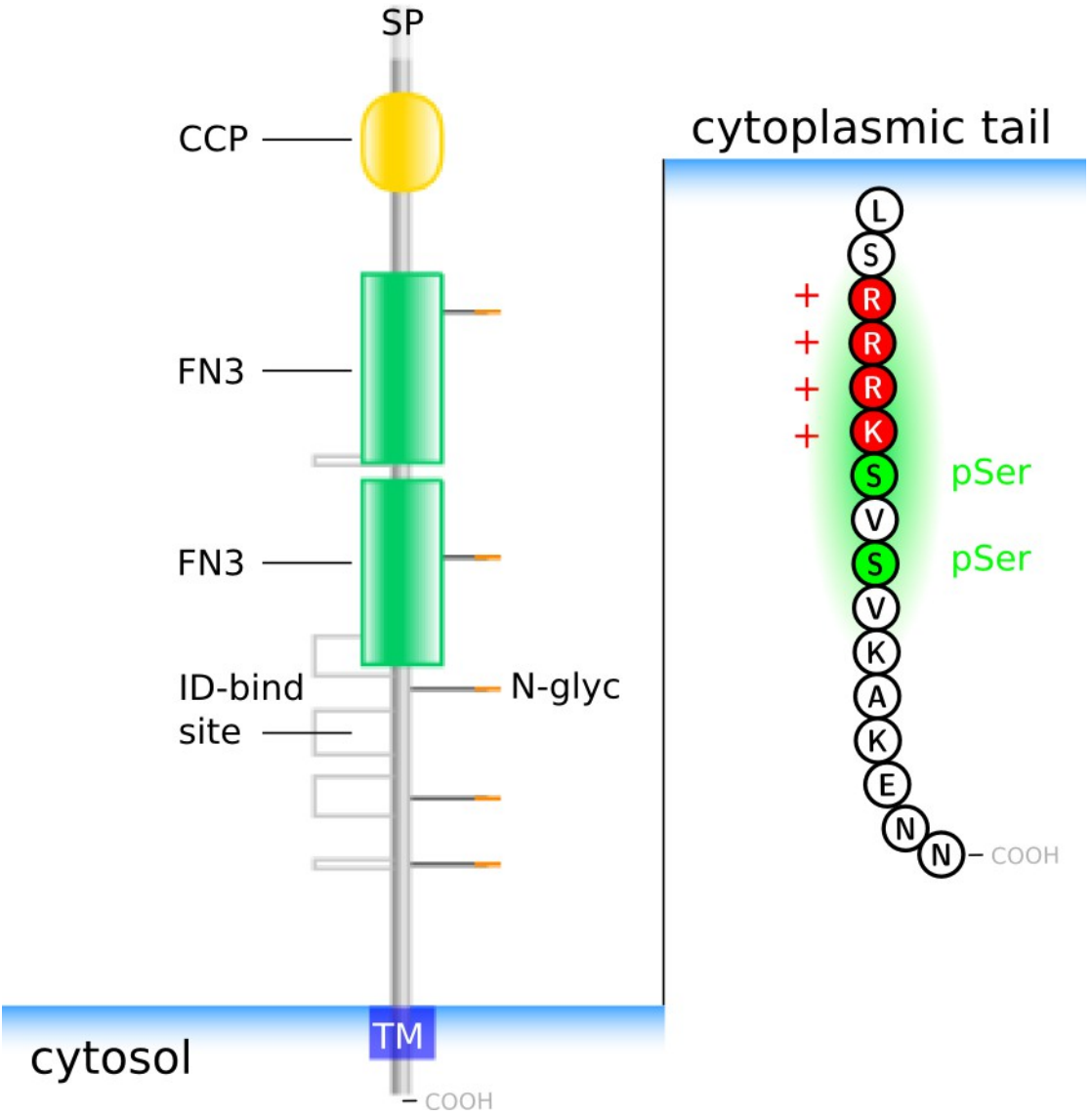
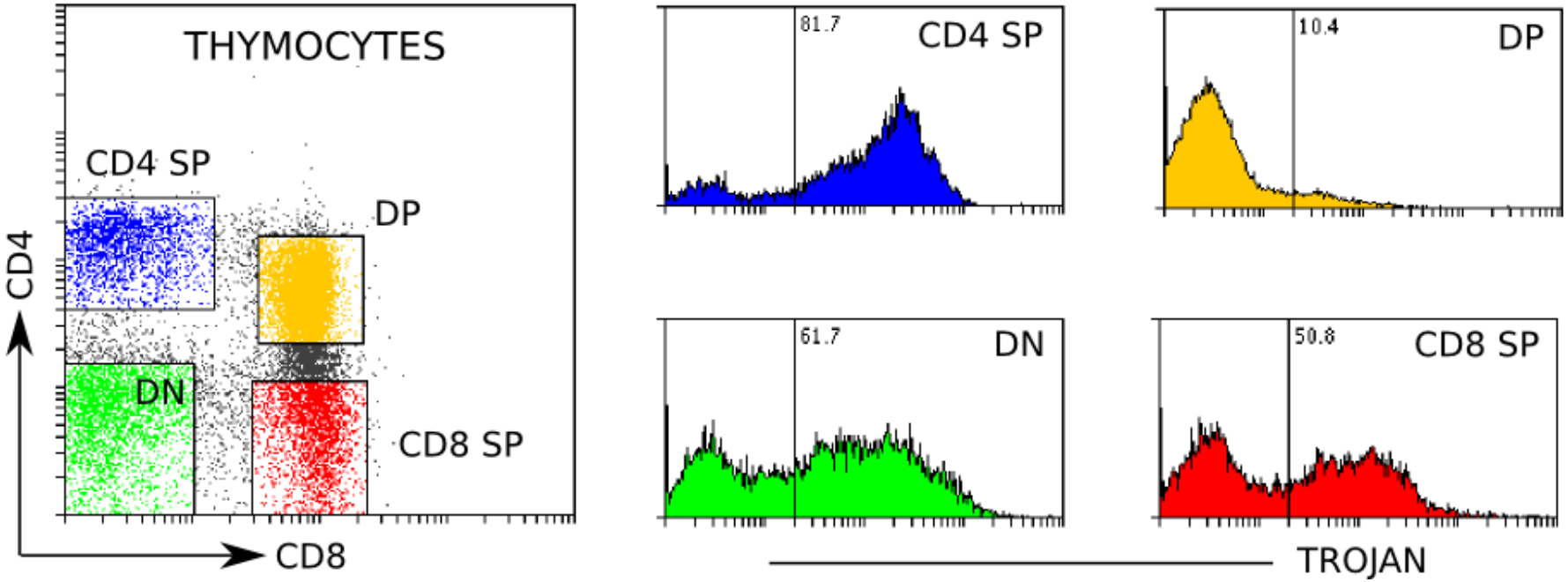
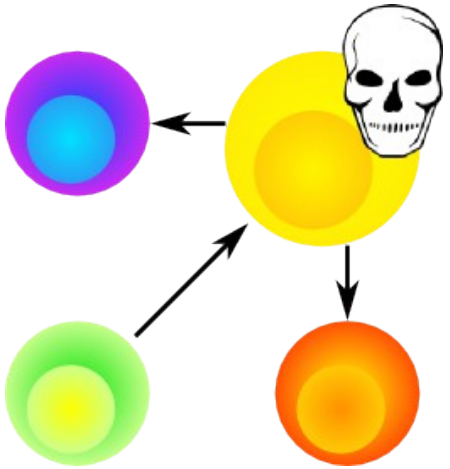
“Trojan”?



- Leukocyte specific
- Type I transmembrane protein
- Cloned from E13 chicken thymus cDNA library
- Topology organisation suggests an ability for protein interaction
- Cytoplasmic tail hints towards molecular association and signalling

Trojan expression diminishes from the surface of DP thymocytes



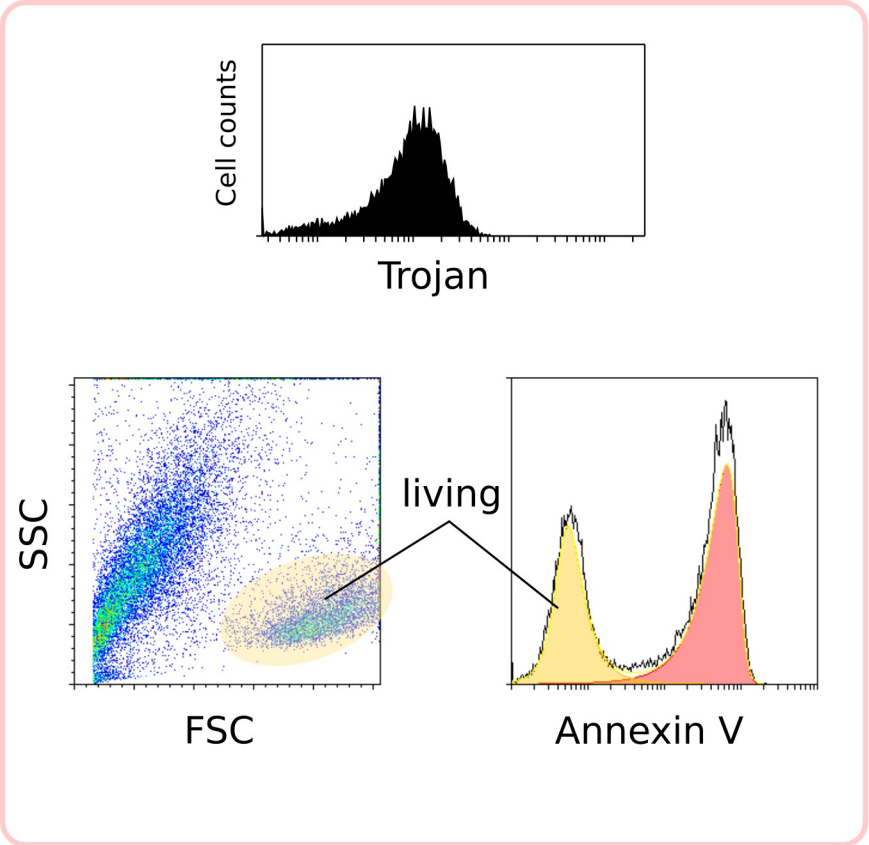


Hypothesis

- Trojan may have an anti-apoptotic and / or proliferative role for immune cells.

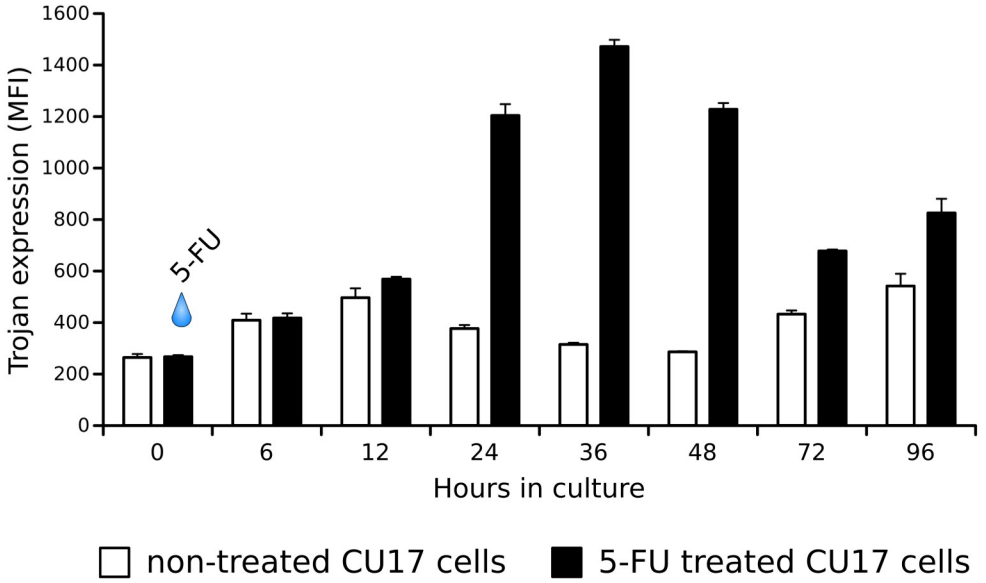
Upon apoptosis induction, Trojan expression rises on surviving cells

- **CU17**: a chicken CD4+ T cell line that expresses Trojan



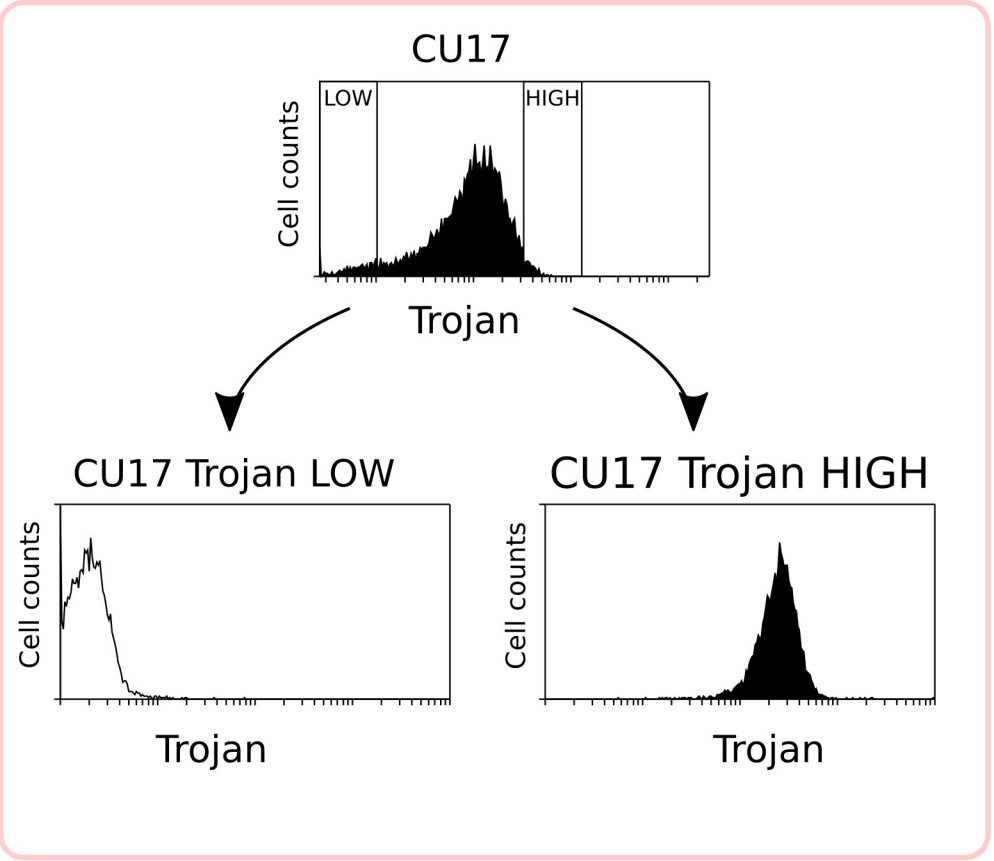
- Treat cells with 5-FU or solvent (DMSO) as a control and monitor changes in Trojan expression

Expression of Trojan on living cells

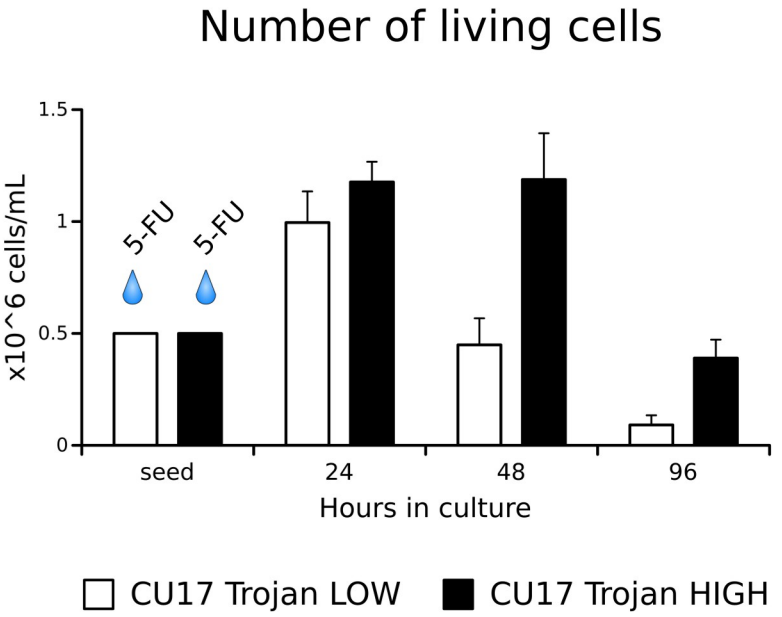


Cells expressing Trojan are less susceptible to apoptosis

- Sort CU17 cells with lowest and highest expression of Trojan

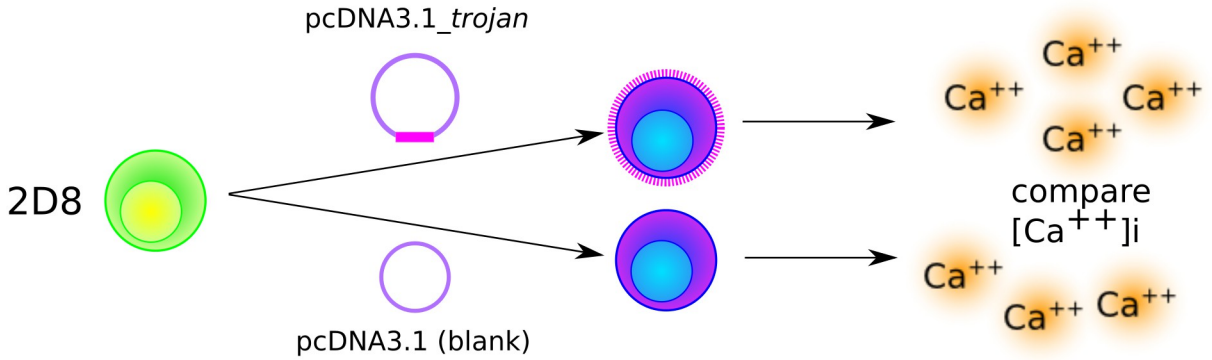


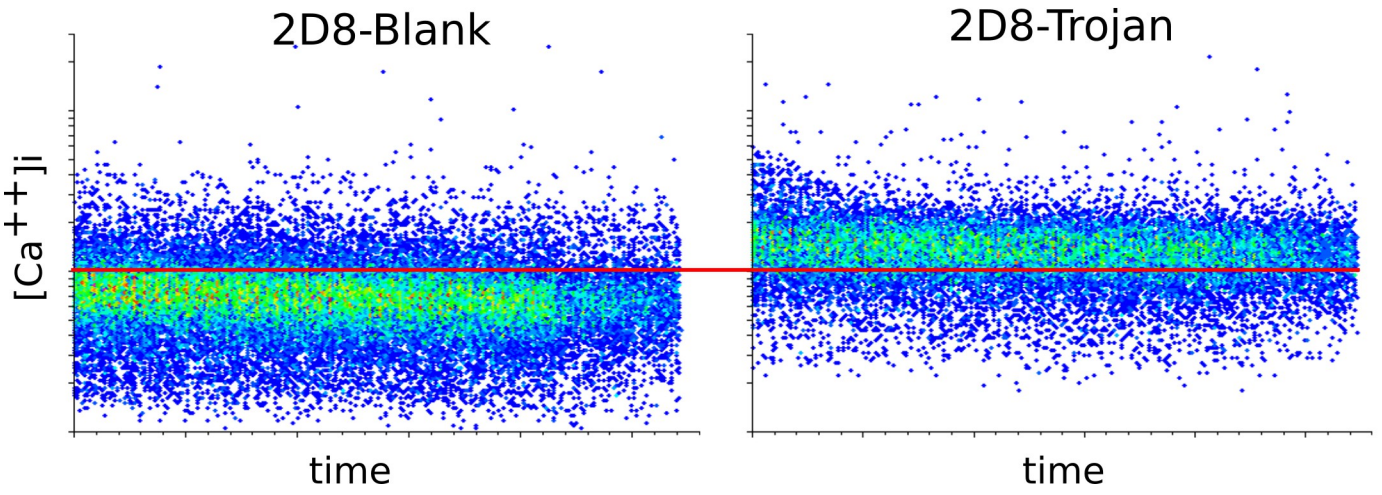
- Establish CU17 sub-lines with low and high expression of Trojan
- Treat the sub-lines with 5-FU and compare their growth

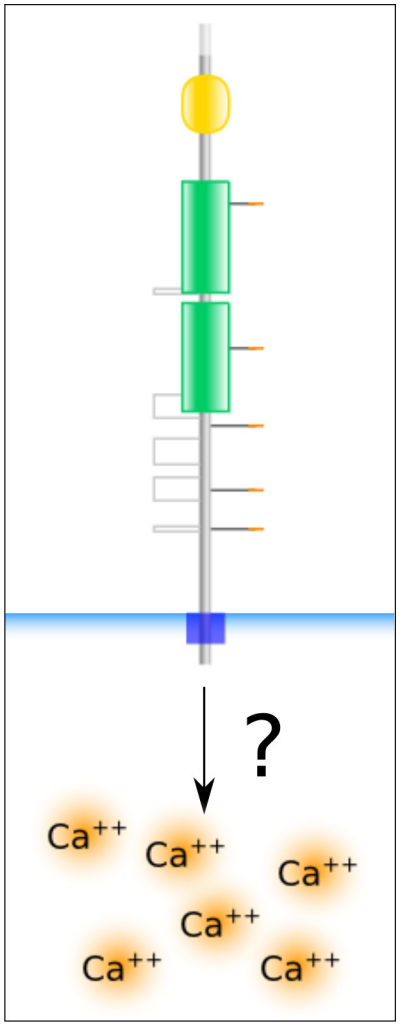


Calcium baselevels of Trojan overexpressing cells are elevated

- **2D8**: a chicken early B cell line that does not express Trojan

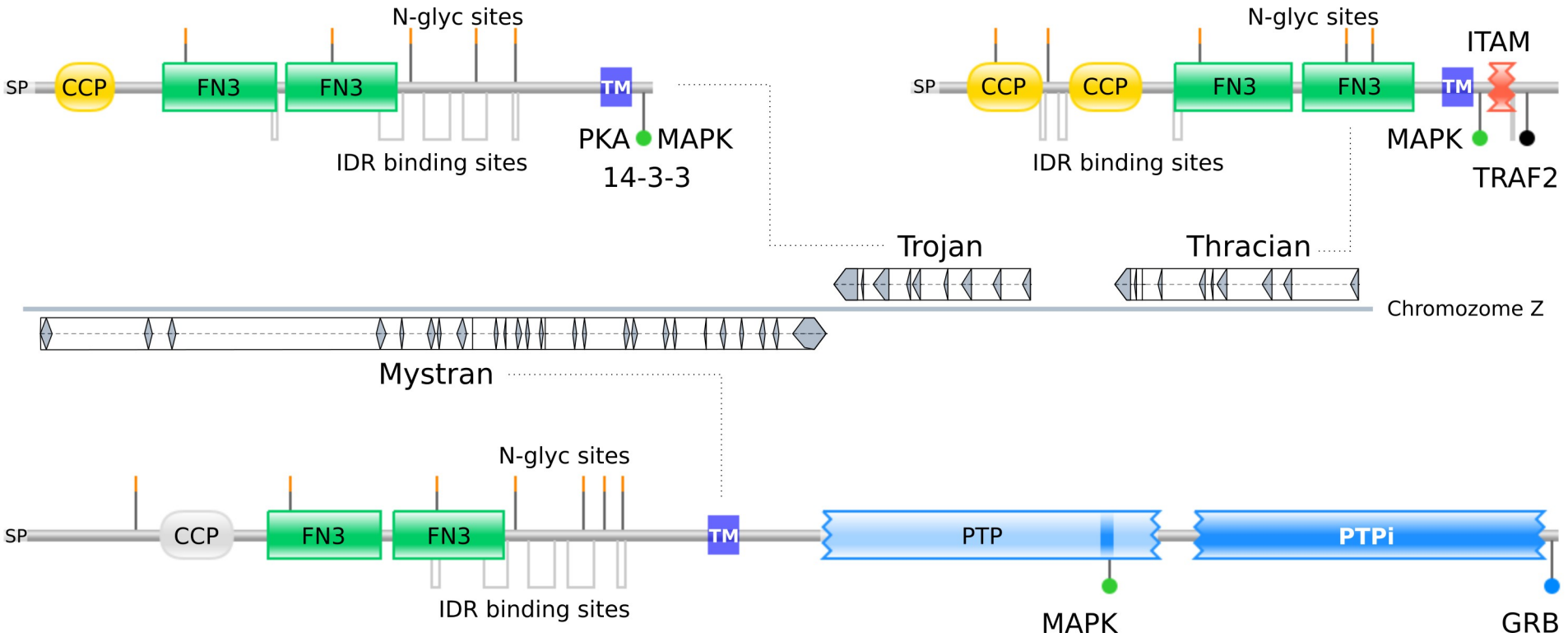




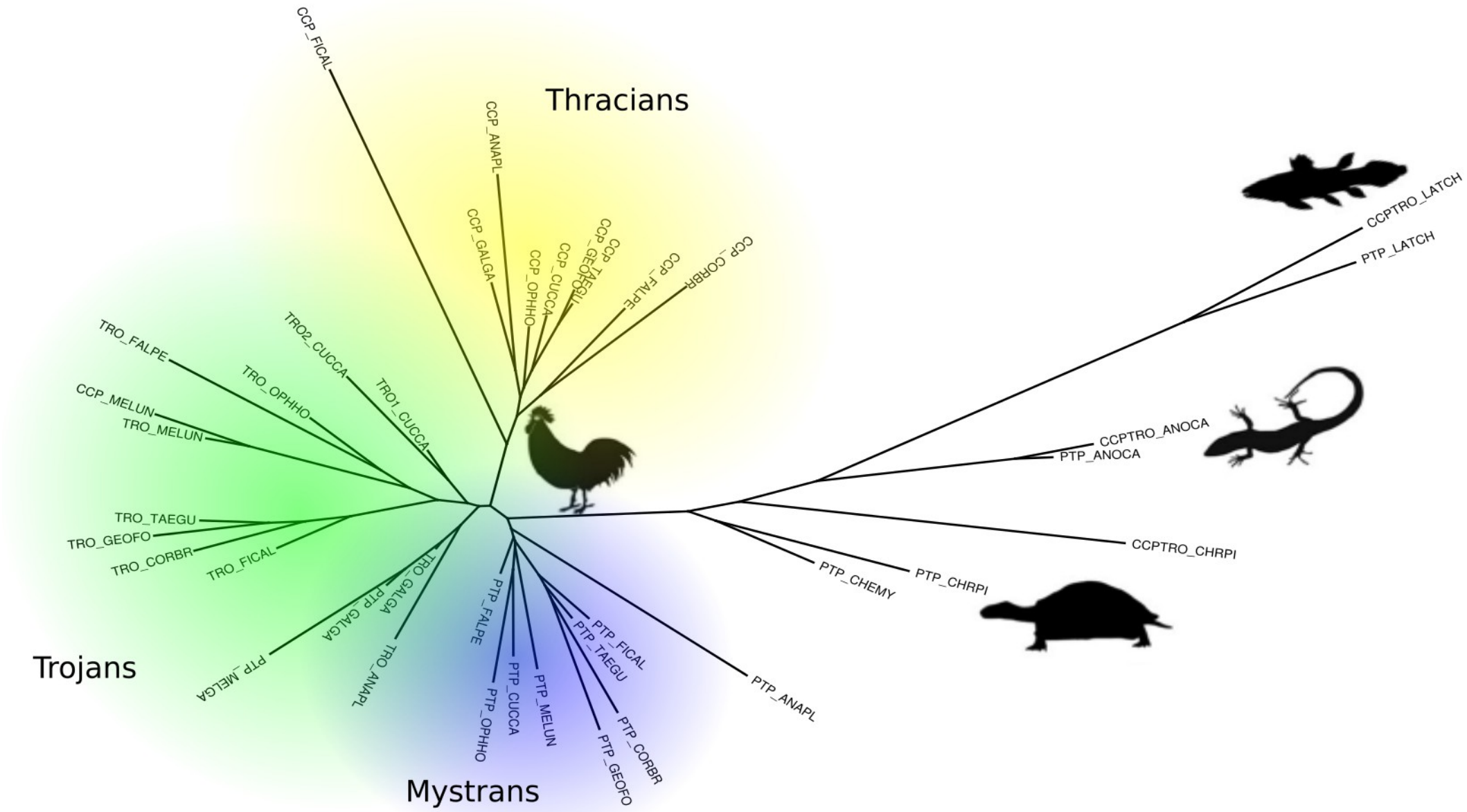


Trojan belongs to a novel gene/protein family

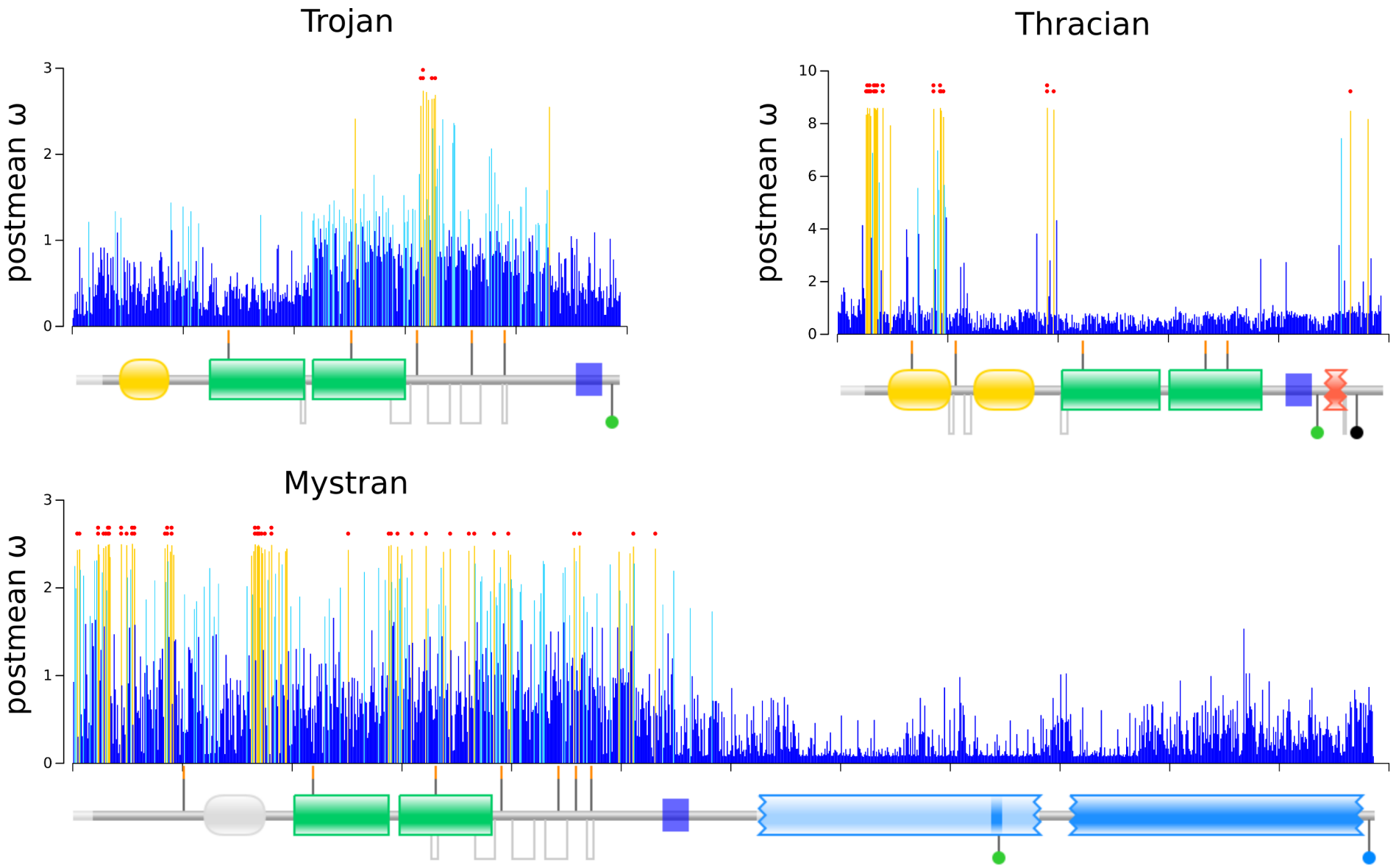
- Consists of three neighbouring genes (including Trojan) in chicken
- Other members: Mystran (a receptor type protein tyrosine phosphatase) and Thracian (a transmembrane protein, containing an ITAM)



The Trojan family exists in other birds, as well as reptiles and coalecanth fish



The Trojan family members were subjected to contrasting evolutionary selection



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LEUKOCYTE PROTEIN TROJAN, AS A CANDIDATE FOR APOPTOTIC REGULATORY ROLE

UNIVERSITY OF OULU GRADUATE SCHOOL;
UNIVERSITY OF OULU,
FACULTY OF MEDICINE;
MEDICAL RESEARCH CENTER OULU;
OULU UNIVERSITY HOSPITAL,
NORDLAB OULU

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Novel leukocyte protein, Trojan, differentially expressed during thymocyte development

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RESEARCH ARTICLE

Characterization of the Avian Trojan Gene Family Reveals Contrasting Evolutionary Constraints

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