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Interferons type II and their receptors R1 and R2 in fish species: evolution, structure, and function

Jiří Zahradník (*), Lucie Kolářová, Hana Pařízková, Petr Kolenko, and Bohdan Schneider (*)

Laboratory of Biomolecular Recognition,
Institute of Biotechnology of the Czech Academy of Sciences, v. v. i., BIOCEV,
Průmyslová 595, CZ-252 42 Vestec, Czech Republic

(*) Corresponding authors. zahardj@ibt.cas.cz, bohdan.schneider@gmail.com

Key words: Interferon gamma; Type II interferons; Jak-Stat pathway; fibronectin type III domain; class 2 cytokine receptors, fish immunity, bioinformatics, crystal structure, SAXS

Highlights

- A phylogeny for fish IFN- γ , IFN- γ R1 and IFN- γ R2 was inferred.
- The existence of two classes of IFN- γ related proteins, IFN- γ relA and IFN- γ relC was proposed.
- Olive flounder (*Paralichthys olivaceus*) IFN- γ crystal structure was determined at 2.3 Å resolution.
- Structure guided sequence bioinformatics and affinity measurements were used to describe molecular coevolution between IFN- γ and IFN- γ R1.

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