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DIVERSITY OF LECTIN-SUGAR RECOGNITION SYSTEMS IN THE EVOLUTION OF FISH INNATE IMMUNITY

Carbohydrate recognition and interactions mediated by lectins have been recognized involved in vertebrate innate immunity, not only for recognition of potential pathogens, but also acting in the agglutination, immobilization and other functional steps.

Fish are equipped with a complex lectin repertoire that, like mammals, are involved almost all the immune reactions.

On the basis of our results on the isolation, cDNA cloning, structural analysis, tissue expression and localization, and opsonic activity of F-type and RBL lectins from *Dicentrarchus labrax* and *Sparus aurata* we showed that:

1. Lectin repertoires in fish are highly diversified and include not only representatives of the lectin families; described in mammals, but also members of lectin families described for the first time in fish species like the F type lectins;
2. The tissue-specific expression and localization of the diverse lectin repertoires and their molecular partners is consistent with their distinct biological roles in innate and adaptive immunity;
3. Although some lectins may bind endogenous ligands, others bind sugars on the surface of potential pathogens; in addition to pathogen recognition and opsonization, some lectins display additional effector roles, such as regulation of immune functions.