

## عنوان مقاله:

Research Article: Characterization of a high-affinity polyclonal antibody against the *Cyprinus carpio* (Linnaeus, ۱۷۵۸) intestinal tight junction protein occluding

## محل انتشار:

مجله علوم شیلات ایران، دوره 20، شماره 2 (سال: 1399)

تعداد صفحات اصل مقاله: 15

## نویسندگان:

J.C. Feng - *College of Fisheries*

X.R. Guo - *College of Fisheries*

X.L. Chang - *College of Fisheries*

Y.R. Zhang - *College of Fisheries*

X.L. Meng - *College of Fisheries*

R.H. Lu - *College of Fisheries*

M.Y. Huang - *College of Fisheries*

G.X. Nie - *College of Fisheries*

J.X. Zhang - *College of Fisheries*

## خلاصه مقاله:

Tight junction protein, occludin, plays an important role in intestinal health of fish. To study the function of occludin in the intestinal barrier at the protein level, a rabbit occludin polyclonal antibody was prepared against heterologously expressed *Cyprinus carpio* A fragment of the occludin gene containing antigenic determinants was first ligated into the pET-۲۱a, which is an expression vector and transformed into *E. coli* BL۲۱ (DE۳) strain. Expression of the target fusion protein was induced by isopropyl-beta-D-thiogalactopyranoside (IPTG). The purified fusion protein was used as an antigen to immunize New Zealand long-eared rabbits (*Oryctolagus cuniculus*) through ear margin vein and subcutaneous injection to obtain rabbit anti-carp polyclonal antibodies against occludin. Enzyme-linked immunosorbent assay (ELISA) was used to evaluate the antibody titre, and the antibody was used to determine the distribution and expression of occludin in the intestine of carp after infection with *Aeromonas hydrophila*. The target fusion protein had a molecular weight of approximately ۳۱.۷ ku, the antibody titre was  $۲.۴ \times ۱۰^۶$ , and the integrity of occludin protein was lower in various intestinal segments after *A. hydrophila* infection. The results indicated that the prepared antibody had a high titre, affinity, and specificity and can be applied to study the expression and distribution of occludin in *C. carpio*. The availability of this polyclonal antibody laid the foundation for the systematic study of the intestinal barrier of *Cyprinus carpio*. Additionally, this polyclonal antibody could also be used for explorative studies of the biological function of occludin in other fishes.

<https://civilica.com/doc/1396604>

