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Gill mucus holds the key against *Sparicotyle chrysophrii* infection in gilthead seabream (*Sparus aurata*)

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It is yet unknown whether gilthead seabream develops immunologic memory and protection after a first exposure to the gill ectoparasite *Sparicotyle chrysophrii*, known to feed on its host blood causing severe anemia. For this purpose, experimentally infected gilthead seabream (n=25) were kept during an entire year until they naturally lost the infection. These recovered fish (RE), and additional naïve fish (n=25, NAI), were exposed to *S. chrysophrii*. At three lethal samplings, blood was taken and hemoglobin and hematocrit values immediately registered, serum samples and gill mucus collected, and biometric and infection intensity data recorded. Before parasite exposure (t0), 5 RE and 5 NAI were sampled. At four- and eight-weeks post exposure (wpe) (t1 and t2, respectively), 10 RE and 10 NAI were sampled. ELISAs for total and specific IgM and IgT detection in serum and mucus samples were carried out. Prevalence of infection was 100% in both recipient groups, but in t2, the RE group had significantly lower infection intensity and significantly higher hemoglobin concentration. Gill mucus IgT, total and specific, and specific IgM were significantly higher in RE than in NAI at t0, and were depleted at t2. Gill mucus total IgM of RE increased significantly at t2. Serum IgT was depleted at t2 in both experimental groups, whereas serum IgM, total and specific, was reestablished or increased only in RE at t2. Therefore, specific Ig levels found in the gill mucus of RE seem to mitigate sparicotylosis in gilthead seabream, pointing to a local protective acquired response.