

Enfoque holo-ómico en la evaluación genética de peces: interacción entre el hospedero y comunidades

L. Venegas^{1,2}, D. Tapia^{1,3} y J. M. Yáñez^{1,3*}

¹ Facultad de Ciencias Veterinarias y Pecuarias, Universidad de Chile, Santiago, Chile

² Institut de Biologie Intégrative et des Systèmes, Université Laval, Quebec, Canadá

³ Nucleo Milenio Invasal, Concepción, Chile

*jmayanez@uchile.cl

- Butt, R. & Volkoff, H. 2019. Gut microbiota and energy homeostasis in fish. *Frontiers in Endocrinology*, 10: 6-8.
- Berg, G., Rybakova, D., Fischer, D., Cernava, T., Vergès, M. C. C., Charles, T., Chen, X., Cocolin, L., Eversole, K., Corral, G. H., Kazou, M., Kinkel, L., Lange, L., Lima, N., Loy, A., Macklin, J. A., Maguin, E., Mauchline, T., McClure, R., ... Schloter, M. 2020. Microbiome definition re-visited: old concepts and new challenges. *Microbiome*, 8: 40168.
- Difford, G., Lassen, J., Guldbrandtsen, B. & Sahana, G. 2018. Microbility – new insights into (genetic) modelling methane emissions of cattle. 11th World Congress on Genetics Applied to Livestock Production, 405-. [<http://www.wcgalp.org/system/files/proceedings/2018/microbiology-new-insights-genetic-modelling-methane-emissions-cattle.pdf>]
- Dvergedal, H., Sandve, S., Angell, I., Klemetsdal, G. & Rudi, K. 2020. Association of gut microbiota with metabolism in juvenile Atlantic Salmon. *BioRxiv*: 1-8.
- Infante-Villamil, S., Huerlimann, R. & Jerry, D. 2021. Microbiome diversity and dysbiosis in aquaculture. *Reviews in Aquaculture*, 13: 1077-1096.
- Kelly, C. & Salinas, I. 2017. Under pressure: Interactions between commensal microbiota and the teleost immune system. *Frontiers in Immunology*, 8: 1-9.
- Limborg, M., Alberdi, A., Kodama, M., Roggenbuck, M., Kristiansen, K. & Gilbert, M. 2018. Applied Hologenomics: Feasibility and Potential in Aquaculture. In *Trends in Biotechnology* Vol. 36, pp. 252–264). Elsevier Ltd.
- Lyons, P., Turnbull, J., Dawson, K. & Crumlish, M. 2017. Phylogenetic and functional characterization of the distal intestinal microbiome of rainbow trout *Oncorhynchus mykiss* from both farm and aquarium settings. *Journal of Applied Microbiology*, 122: 347-363.
- Rowland, I., Gibson, G., Heinen, A., Scott, K., Swann, J., Thiele, I. & Tuohy, K. 2018. Gut microbiota functions: metabolism of nutrients and other food components. In *European Journal of Nutrition*, Vol. 57, Issue 1. Dr. Dietrich Steinkopff Verlag GmbH and Co. KG.
- Saborío-Montero, A., Gutiérrez-Rivas, M., López-García, A., García-Rodríguez, A., Atxaerandio, R., Goiri, I., Jiménez-Montero, J. & González-Recio, O. 2021. Holobiont effect accounts for more methane emission variance than the additive and microbiome effects on dairy cattle. *Livestock Science*, 250: 104538.
- Song, S., Woodhams, D. C., Martino, C., Allaband, C., Mu, A., Javorschi-Miller-Montgomery, S., Suchodolski, J. & Knight, R. 2019. Engineering the microbiome for animal health and conservation. *Experimental Biology and Medicine*, 244: 494-504.
- Theis, K., Dheilly, N., Klassen, J., Brucker, R., Baines, J., Bosch, T., Cryan, J., Gilbert, S., Goodnight, C., Lloyd, E., Sapp, J., Vandenkoornhuyse, P., Zilber-Rosenberg, I., Rosenberg, E. & Bordenstein, S. 2016. Getting the Hologenome Concept Right: an Eco-Evolutionary Framework for Hosts and Their Microbiomes. *MSystems*, 1: 1-6.
- Zhang, Y., Wen, B., David, M., Gao, J. & Chen, Z. 2021. Comparative analysis of intestinal microbiota of discus fish (*Symphysodon haraldi*) with different growth rates. *Aquaculture*, 540.