outubro

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CICLO DE CONFERÊNCIAS ISPA-IU

Centro de Investigação e Intervenção

14 DE OUTUBRO > 12:30H > SALA DE ACTOS

NEUROENDOCRINE MECHANISMS OF SOCIAL DIVERSITY IN BIRDS

Jim Goodson, Phd

Indiana University, USA

As evidenced by their phylogenetic distributions, components of social organization change vary rapidly over evolutionary time, and thus behavioral variables such as mating system and grouping ("sociality") are prone to repeated divergence and convergence. Given this, plus the complexity of relevant neural mechanisms, we cannot assume that evolutionary convergence in social structure has been produced by convergent modifications to the same neural characters. However, using five estrildid finch species that differ selectively in their species-typical group sizes (all biparental and monogamous) we have demonstrated that neural motivational systems evolve in predictable ways in relation to sociality. These systems include nonapeptide circuits that encode social valence (positive-negative) and dopamine circuits that encode "incentive value" and drive appetitive social behaviors. Nonapeptide and dopamine systems exhibit functional and anatomical properties that are biased towards gregarious species, and experimental reductions of nonapeptide signaling by antisense oligonucleotides and receptor antagonism significantly decrease preferred group sizes in the gregarious zebra finch. Combined, these findings suggest that selection on species-typical group size may reliably target the same neural motivation systems when a given social structure evolves independently.

ENTRADA LIVRE

Informações: cii@ispa.pt

ISPA - INSTITUTO UNIVERSITÁRIO
Rua Jardim do Tabaco, 34 1149-041 Lisboa
Tel.: 218 811 700 > Fax: 218 860 954

www.ispa.pt